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VOL. XVII. NO. 9.

MAY 1, 1889.

PEACE • ON • EARTH • & • GOOD • WILL • TOWARD • MEN



CLEANING IN BEE CULTURE

DEVOTED
TO
BEEKEEPING

& HOME INTERESTS.

MEDINA, OHIO

BY

AL ROOT

TERMS, ONE DOLLAR PER YEAR.

W Conrad

FARMINGTON, DUNELLEN, N.S.

GLEANINGS IN BEE CULTURE.

ADVERTISEMENTS.

We require that every advertiser satisfy us of responsibility and intention to do all that he agrees, and that his goods are really worth the price asked for them. Patent-medicine advertisements, and others of a like nature, can not be inserted at any price.

Rates for Advertisements.

All advertisements will be inserted at the rate of 20 cents per line, Nonpareil space, each insertion; 12 lines of Nonpareil space make 1 inch. Discounts will be made as follows:

On 10 lines and upward, 3 insertions, 5 per cent; 6 insertions, 10 per cent; 9 insertions, 15 per cent; 12 insertions or more, 20 per cent; 24 insertions or more, 25 per cent.

On 48 lines (½ column) and upward, 1 insertion, 5 per cent; 3 insertions, 10 per cent; 6 insertions, 15 per cent; 9 insertions, 20 per cent; 12 insertions, or more, 25 per cent; 24 insertions or more, 33½ per cent.

On 96 lines (whole column) and upward, 1 insertion, 10 per cent; 3 insertions, 15 per cent; 6 insertions, 20 per cent; 9 insertions, 25 per cent; 12 insertions, or more, 33½ per cent; 24 insertions or more, 40 per cent.

On 192 lines (whole page), 1 insertion, 15 per cent; 3 insertions, 20 per cent; 6 insertions, 25 per cent; 9 insertions, 30 per cent; 12 insertions or more, 40 per cent; 24 insertions or more, 50 per cent.

No additional discount for electrotype advertisements. A. I. Root.

CLUBBING LIST.

We will send GLEANINGS—		
With the American Bee-Journal, W'y	(\$1.00)	\$1.75
With the Canadian Bee Journal, W'y	(1.00)	1.75
With the Bee Hive,	(.30)	1.20
With the Bee-Keepers' Review,	(.50)	1.40
With the British Bee-Journal,	(2.62)	3.25
With all of the above journals,		6.40
With American Apiculturist,	(\$1.00)	1.70
With Bee-Keepers' Advance and Poultryman's Journal,	(.50)	1.45
With American Agriculturist,	(\$1.50)	2.25
With American Garden,	(2.00)	2.60
With Prairie Farmer,	(1.50)	2.35
With Rural New-Yorker,	(2.00)	2.90
With Farm Journal,	(.50)	1.25
With Scientific American,	(3.00)	3.75
With Ohio Farmer,	(1.00)	1.90
With Popular Gardening,	(1.00)	1.85
With U. S. Official Postal Guide,	(1.50)	2.25
With Sunday-School Times, weekly,	(2.00)	2.25
With Drainage and Farm Journal,	(1.00)	1.75
[Above Rates include all Postage in U. S. and Canada.]		

FLAT - BOTTOM COMB FOUNDATION.



High side-walls, 4 to 14 square feet to the pound. Circular and samples free.

J. VAN DEUSEN & SONS.

5tfid Sole Manufacturers,
SPROUT BROOK, MONT. CO., N. Y.



You can not look over the back No's of GLEANINGS, or any other periodical with satisfaction, unless they are in some kind of a binder. Who has not said—"Dear me, what a bother—I must have last month's journal and it is nowhere to be found?" Put each No. in the Emerson binder as soon as it comes, and you can sit down happy, any time you wish to find anything you may have previously seen, even though it were months ago.

Binders for GLEANINGS (will hold them for one year) gilt lettered, for 60 cts.; by mail, 12 cts. extra. Ten, \$5.00; 100, \$45.00. Table of prices of binders for any periodical, mailed on application. Send in your orders. A. I. ROOT, Medina, Ohio.

Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per annum, when given once a month, or \$4.00 per year if given in every issue.

Untested Queens

FOR \$1.00 FROM JULY 1ST TILL NOV. 1ST.

Names inserted in this department the first time without charge. After, 20c each insertion, or \$2.00 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with *, use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for \$1.00 before July 1st, or after Nov. If wanted sooner, or later, see rates in price list.

*A. I. Root, Medina, Ohio.	
*H. H. Brown, Light Street, Col. Co., Pa.	7tfid89
*Paul L. Viallon, Bayou Goula, La.	7tfid89
*S. F. Newman, Norwalk, Huron Co., O.	7tfid89
*Jos. Byrne, Ward's Creek, East Baton Rouge	
7-tfd Par., La.	
C. C. Vaughn, Columbia, Tenn.	21tfid88
Wm. L. Ashe, Edwardsville, Mad. Co., Ill.	11tfid88
J. M. Jenkins, Wetumpka, Ala.	9tfid89
*Oliver Hoover & Co., Snyderstown, Northum-	
5-15d berland Co., Pa.	
Abbott L. Swinson, Goldsboro, Wayne Co., N. C.	5tfid
C. R. Mitchell, Ocala, Marion Co., Fla.	9tfid89
E. Burke, Vincennes, Knox Co., Ind.	9-8-1890

Hive Manufacturers.

Who agree to make such hives, and at the prices named, as those described on our circular.

A. I. Root, Medina, Ohio.	
P. L. Viallon, Bayou Goula, Iberville Par., La	7tfid89
C. W. Costello, Waterboro, York Co., Me.	7tfid-89
R. B. Leahy, Higginsville, Laf. Co., Mo.	21tfid88
J. M. Jenkins, Wetumpka, Ala.	9tfid89
C. R. Mitchell, Ocala, Marion Co., Fla.	9tfid89

Oldest Bee Paper in America—Established in 1861.

AMERICAN BEE JOURNAL,

16-page Weekly—\$1.00 a year.

Sample Free. **THOMAS G. NEWMAN & SON,**
925 West Madison Street, Chicago, Ill.

BEE-KEEPER'S GUIDE.

Every farmer and bee-keeper should have it. 15th thousand just out; much enlarged, beautifully illustrated, and fully up to date. It is both practical and scientific. Price \$1.50. To dealers, \$1.00 by mail to any address. In 100 lots, 50% off by freight.

17-15d Address **A. J. COOK,**
Agricultural College, Mich.

FOR SALE.

Fifty colonies of Italian bees in 10-frame Langstroth hives, at \$5.00 per stand; 10 per cent off for more than one stand. **JOHN GRAND,**
7-11db Batavia, Clermont Co., O.

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THE EASIEST WAY TO GET YOUR CHAFF HIVES,

Is to sell a few for me to your neighbors, and make profit enough to buy your own. Write for terms at once.

3tdfb J. A. ROE, Union City, Ind.

In responding to this advertisement mention GLEANINGS.

HOLY-LAND QUEENS A SPECIALTY.

BEES BY THE POUND, IN A L. FRAME.

BEE-KEEPERS' SUPPLIES.

GEO. D. RAUDENBUSH, 445 CHESTNUT ST., READING, PA.
Mention GLEANINGS. 9-10-11d

J. W. K. SHAW & CO.,
Loreauville, Iberia Parish, La.

All \$1.50 queens are sold. We have warranted queens, fine, light yellow, \$1.00 each, 6 for \$5.00. Untested, 85 cts.; \$9.00 per doz. Virgin queens, 3 for \$1.00. Tested queens, each, \$1.25, in May. All imp. mothers. Postal orders on New Iberia, La.
Mention GLEANINGS. 9-11d

WANTED! At Plattsmouth, Nebraska, to Sell
3-Frame Nucleus Colonies Italian Bees with Queens, at \$2.50 Each.

9tfdb J. M. YOUNG, Box 874, Plattsmouth, Neb.

**THE BRIGHTEST FOUR-BANDED
GOLDEN ITALIAN BEES AND QUEENS,
AND THE REDDEST DRONES.**

Price, select tested, \$3.00; tested, \$2.00. Untested, in May, \$1.25; June and after, \$1.00.

9-12db L. L. HEARN, Frenchville, W. Va.

In responding to this advertisement mention GLEANINGS.

Choice Italian Queens!

Tested, \$1.50; untested, \$1.00. None but pure Italians in our apiary.

Brood Foundation 43 cts. per lb. Foundation for sections, 55 cts. per lb. 7d
MISSIS S. & M. BARNES, Piketon, Ohio.

Italian and Albino Queens and Bees

OR THEIR CROSSES,

Ready to Ship May 15th.

The crosses of these two races make the finest bees I ever saw. They are large, very light colored, and good workers. Will sell in any shape or quantity to suit purchaser. Send for price list, and five cents for sample of bees.

9-11-13d

A. L. KILDOW, Sheffield, Ill.

In responding to this advertisement mention GLEANINGS.

Apiarian Supplies.

V-GROOVE SECTIONS OF BASSWOOD,
SHIPPING-CASES OF BASSWOOD,
HIVES OF WHITE PINE COMPLETE.

Manufactured by

WARREN MFG. CO., Riverton, Virginia.

In responding to this advertisement mention GLEANINGS.

100 TONS OF COMB HONEY

Will undoubtedly be put on the market this season in our

FOLDING PAPER BOXES.

Send for catalogue, 20 pages, free. Sample box, 5c. Our prices defy competition.

9-20db

A. O. CRAWFORD, S. Weymouth, Mass.

In responding to this advertisement mention GLEANINGS.

EGGS FOR HATCHING. P. Rock, Light Brahma, R. C. B. Leghorn, P. Duck, \$1.25 per nest; two settings, \$2.00. W. P. Rock, \$1.50 per 13. Choice pure-bred stock. Circular free. S. P. YODER, E. Lewistown, Mahoning Co., Ohio.

1884. TAR-HEEL APIARIES 1889.

Bees, \$1. per lb.

Safe arrival—

bees, queens, and

nuclei. Warranted

queens, \$1 each;

\$5 for 6. Nuclei,

75c per L. frame.

No new list. Prices

same as for last

year. Selected breed-

ing Queens, \$3.

Sample Bees and Drones, 10 cts. Finest in the United States.

8d

ABBOTT L. SWINSON, Goldsboro, N. C.

In responding to this advertisement mention GLEANINGS.

PURE ITALIAN QUEENS

FROM THE APIARIES OF

J. P. CALDWELL,

Of San Marcos, Tex. Reared under the most favorable circumstances. Will be sent by mail postpaid at the following prices:—

	Mar.	Apr.	May.	June.	Oct.
Select tested.....	\$4 00	\$3 75	\$3 25	\$2 75	
Tested.....	3 00	2 75	1 75	1 50	
Untested.....		1 25	1 00	1 00	
6 Untested.....		5 50	5 00	4 50	
12 Untested.....		9 50	9 00	8 50	

Contracts taken with dealers to furnish queens by the week at special rates. Address

5-21db

J. P. CALDWELL, San Marcos, Tex.

SECTIONS, \$2.50 PER M,
when cash accompanies order. Other goods proportionally low. Send for sample section.
9-11d E. S. MILLER, Dryden, Mich.

FOUND AT LAST!

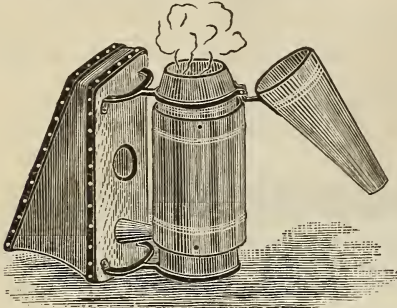
How to cheaply keep eggs fresh for a year. Send for particulars. DR. A. B. MASON,

9-14db


Auburndale, Ohio.

1889. HELLO! HELLO! 1889.


How are supplies selling? You send for W. E. CLARK'S illustrated price list. He is rock bottom for all supplies, and don't you forget it.



W. E. Clark's Improved Hinge-Nozzle Quinby Smoker. The Best Smoker Made.

Oriskany, - Oneida Co., - New York
3-14db  Mention Gleanings.

THOROUGHbred White P. Rock, W. Wyandotte eggs, \$1.50 per 13; L. Brahma, P. Rock, L. Wyandotte, W. and B. Leghorn eggs, \$1.00 per 13. **Italian Queens**, reared on the Doolittle plan, select tested, in May, \$3.00; June, \$2.50. Warrented, May, \$1.25; June, \$1.00.


C. H. WATSON,
Newtown, Bucks Co., Pa.
7-12db
 In responding to this advertisement mention GLEANINGS.

Minnesota Ahead!

We are selling L. hives with T supers for 55c., and brood-frames for \$1.00 per hundred. Send for circular before ordering elsewhere. 7-10db
WM. H. BRIGHT, Mazeppa, Minn.

S. D. McLEAN

Will sell bees by the pound, Colonies, Nuclei, and Queens, **Cheap**. Write for terms to
3-9d COLUMBIA, TENNESSEE.

 In responding to this advertisement mention GLEANINGS.

**BEEES FOR SALE!**

Colonies, Nuclei, Queens (Tested and Untested), at living rates. Send for circular and price list to

C. C. VAUGHN & CO.,
Columbia, Tenn.




4-9db

VIRGIN QUEENS.

The bulk of the traffic in queens in the near future will probably be in "Virgins." Every person sending direct to the office of the *Canadian Bee Journal* one dollar for one year's subscription (either renewal or new), in advance, will receive a beautiful virgin queen (value 60 cents), as soon as possible, in the season of 1889. Queens will be sent in the same rotation as cash is received. American currency, stamps, and money orders received at par.
THE D. A. JONES CO., BEETON, ONTARIO, CAN.

ITALIAN QUEENS.

Tested, \$2.00, \$1.50, and \$1.25, in Apr., May and June. One untested, May, \$1.00; after June 1st, .75. Three untested, May, \$2.50; after June 1st, \$2.00. Three-frame nuclei, with untested queen, May, \$3.50; June, \$3.00; after, \$2.60; with tested queen, add 50 cts. For prices of 2-frame nuclei bees, per lb. and 1/2 lb., full colonies, foundation, and beekeepers' supplies, write for price list. Address
6-11db JNO. NEBEL & SON, High Hill, Mo.
 In responding to this advertisement mention GLEANINGS.


Apr. 1. For 60 Days. 1889.

We have on hand a large stock of one-piece sections, which are first class. To reduce stock we will name very low prices for the next 60 days, in any size lots from 1000 to 100,000 or more. Save money by letting us know what you want. Other supplies to correspond in price. Price list free.

7tfdb **SMITH & SMITH,**
Mention Gleanings. Kenton, Hardin Co., O.

A NEW BOOK ON BEES, and DADANT'S FOUNDATION.
See advertisement in another column.

If You Want Full value for your money you should see my catalogue before purchasing. Japanese buckwheat, \$1.75 per bushel; 20 varieties of potatoes. Bees, queens, and supplies at low rates. CHAS. D. DUVAL.
7tfdb Spencerville, Mont. Co., Md.


 In responding to this advertisement mention GLEANINGS.

APIARIAN SUPPLIES CHEAP.

BASSWOOD V-GROOVE SECTIONS, \$2.75 to \$3.75
PER M. SHIPPING-CASES VERY LOW.

SEND FOR PRICES.

COODELL & WOODWORTH MFG. CO.,
3tfdb ROCK FALLS, ILLINOIS.

 In responding to this advertisement mention GLEANINGS.


COMB FOUNDATION.

Brood, 32c; thin, 42c; 20 lbs. or more, 30 and 40c.
8-9d H. L. GRAHAM, Letts, Iowa.

A OLD BEE-BOOK REVISED, and DADANT'S FOUNDATION.
See advertisement in another column.

PURE ITALIAN BEES & QUEENS.

Full colonies and nuclei, per frame, 60c. Tested queens, \$2.00; after June 1, \$1.50. Untested queens, \$1.00; after June 1, 75c. Remit by postoffice money order, registered letter, or draft on New York. For any other information, address

C. W. JONES & CO.,
4-9db Bryant Station, Maury Co., Tenn.
 In responding to this advertisement mention GLEANINGS.

**The ABC of
POTATO + CULTURE.**

HOW TO GROW THEM IN THE LARGEST QUANTITY, AND
OF THE FINEST QUALITY, WITH THE LEAST EXPENDITURE OF TIME AND LABOR.

Carefully Considering all the Latest Improvements in this Branch of Agriculture up to the Present Date.

Written by T. B. TERRY, of Hudson, O.

ILLUSTRATED BY TWENTY ENGRAVINGS.

Table of Contents: Soils, and their Preparation.—Manures, and their Application.—When, and How Far Apart Shall we Plant?—Shall we Plant Deep or Shallow?—Shall we Plant in Hills or Drills?—How to Make the Drills, and Fill Them.—Selection and Care of Seed.—Cutting Seed to One Eye.—Planting Potatoes by Machinery.—Harrowing after Planting.—Cultivating and Hoeing.—Handling the Bugs.—The Use of Bushel Boxes.—A Top Box for the Wagon.—Digging.—Storing.—What Varieties shall we Raise?—Potato-growing as a Specialty.—Best Rotation where Potatoes are made a Special Crop.—Cost of Production, and Profits.

Besides the above, we have recently added an appendix of 8 pages, bringing the book up to the present date, and containing an account of all the improvements made during the past two years.

PRICE 35 CTS.; BY MAIL, 38 CTS.

A. I. ROOT, Medina, O.

HONEY COLUMN.

CITY MARKETS.

KANSAS CITY.—Honey.—We quote white 1-lb. sections, at 15@16c; fall or dark, at 12c; 2-lb. California white, 13@14; amber, 11@12. Extracted, in 10-lb. cans, white, 7½@8c; amber, 7@7½; barrels or kegs, 5@6c. Beeswax, 18@20c. Our market is getting into good shape for the new crop.

CLEMONS, CLOON & Co.,
Kansas City, Mo.
April 22.

COLUMBUS.—Honey.—We have no strictly No. 1 honey on our market, and could find sale for some fine white stock. We have a large amount of medium and dark stock on hand, and scarcely any market for same. Dark, 10@12; medium, 12@14; white fine, 15@17. EARL CLICKINGER,
April 19. Columbus, Ohio.

BOSTON.—Honey.—No change in prices on honey or beeswax. Trade is using maple sugar and syrup. Sales of honey very slow. BLAKE & RIPLEY,
April 23. Boston, Mass.

DETROIT.—Honey.—The market is very slow. Best white, in one-pound sections, quoted 15@16c. There are not many nice lots in the commission houses. Extracted, 8c. Beeswax, quiet at 22@23. M. H. HUNT,
Bell Branch, Mich., April 22.

ALBANY.—Honey.—Market is slow; very little call, and very little stock. Will be in good shape for the new crop. H. R. WRIGHT,
April 23. Albany, N. Y.

ST. LOUIS.—Honey.—No change to note. Very little trade. Beeswax, prime yellow, 22. D. G. TUTT GROCER Co.,
April 22. St. Louis, Mo.

PRICE LISTS RECEIVED.

Since our last issue we have received price lists of queens, bees, and apiarian supplies in general, from the following parties, who will be glad to furnish them to applicants. Those marked with a star (*) also deal in fine poultry.

R. W. Turner, Medina, O.
J. B. Hains, Bedford, Cuyahoga Co., O.
E. L. Gould & Co., Brantford, Ontario, Canada.
C. W. Costello, Waterboro, York Co., Maine.
G. K. Hubbard, Ft. Wayne, Ind.
F. A. Salisbury, Syracuse, N. Y.
Joseph M. Hambaugh, Spring, Brown Co., Ill.
C. A. Stockbridge, Ft. Wayne, Ind.
William H. Barr, Whigville, O.
Jerry A. Roe, Union City, Ind.
H. H. Brown, Light Street, Pa.
N. A. Knapp, Rochester, Lorain Co., O.

CONVENTION NOTICE.

The American International Bee-keepers' Association will meet in the Court-house, Brantford, Canada, Dec. 4, 5, 6, 1889. All bee-keepers are invited to attend. State and district bee-keepers' societies are invited to appoint delegates to the convention. Full particulars of the meeting will be given in due time. Any one desirous of becoming a member, and receiving the last annual report, bound, may do so by forwarding \$1.00 to the secretary. R. F. HOLTERMANN, Sec'y.
Brantford, Ont., Can.

The second meeting of the York and Cumberland Bee-keepers' Association will be held in Good Templar Hall, South Waterboro, Me., May 15, commencing at 9:30 A.M. A cordial invitation is extended to all to be present. Matters of interest will be discussed. Bring your hive, or some useful implement for exhibition. Hotel accommodations may be had in the village at reasonable rates. C. W. COSTELLO, Sec'y.

ITALIAN BEES AND QUEENS. Tested queens, \$1.50. Untested, \$1.00. Bees, per lb., \$1.00. Frame of brood, 50 cts. Nuclei a specialty. Send card for price list. MISS A. M. TAYLOR,
9-10d. Box 77. Mulberry Grove, Bond Co., Ill.

In responding to this advertisement mention GLEANINGS.

50 COLONIES OF BEES FOR SALE, IN LOTS to suit purchaser; also Vandervort section fdn. machine. WILL ELLIS, St. Davids, Ontario, Canada.

FOR SALE.—One Barnes combined circular saw, with necessary gauges for making the S. hive, o. b. c. Price \$20.00, in good running order. 9-10d. W. T. ZINK, Nichols, Greene Co., Mo.

BEE-SUPPLIES.

ONE-PIECE V-GROOVE

WHITE BASSWOOD SECTIONS.

SURPRISE YOURSELF ON LOW PRICES BY WRITING FOR FREE SAMPLE AND PRICE LIST.

Goshen Bee-Supply Co., - - Goshen, Ind.

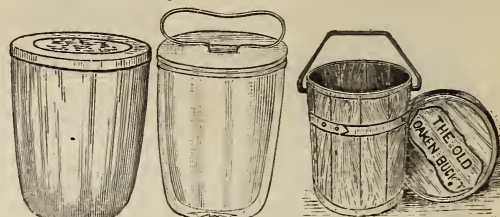
In responding to this advertisement mention GLEANINGS.

"VALLEY FARM" APIARY.

To reduce stock I will sell 5 to 10 colonies of Italian bees in Simp. hives. Queens were bred from one of Mr. Doolittle's \$4.00 tested queens. Price \$5 to \$8, according to prolificness of queen, etc.

G. WIEDEBOLD, Yonkers, N. Y. Opp. Dunwoodie Station.
Mention GLEANINGS. 9-10-11d

Glass Honey Tumblers and Pails.



Glass Tumbler. Nos. 788 and 789. Screw-top Pail. Nos. 775 to 778. Oaken Bucket Pail.

Above we present our three staple styles of glass honey-packages for this season. We are unable to get any more of the screw-top glass pails, shown in our catalogue, such as we have been selling for a number of years, and we have substituted in its place the one shown in the center above. We have this made specially for our trade, and no one else handles it. The following revised table of prices takes the place of those in our catalogue. Please notice important changes, and please be careful to be specific in telling what you want when you order. Give the quantity, number, name, and price, to avoid mistakes.

TABLE OF PRICES—NO CHARGE FOR PACKAGES.

Please order by number and name, and give price.

Number and Name.	Capacity.		Price.		Barrels.	
	ity.	Ea.	10.	100	No.	Pr.
No. 778, ½-lb. tumbler	10 oz.	3	28	2.50	250	\$5.30
No. 789, one-pound tumbler	16 oz.	3	30	3.00	300	5.20
Nos. 788 and 789, nested	6	57	5.25	300	9.00	
No. 775, ½-lb. screw-top glass pail	11 oz.	5	40	3.50	250	7.30
No. 776, small pound screw-top pail	14 oz.	5	42	3.75	200	6.60
No. 777, large pound screw-top pail	17 oz.	6	52	4.75	150	6.60
No. 778, ½-lb. screw-top glass pail	24 oz.	7	65	6.00	100	6.00
½-lb. Oaken Bucket pail	10 oz.	5	42	3.75	300	6.00
1-lb. Oaken Bucket pail	16 oz.	5	45	4.30	150	6.10

In lot of 5 barrels, any one or assorted kinds, 5% discount. Please notice these points in the table above.

1. The capacity as given is what each will hold, well filled with honey of good consistency.
2. The price of one, 10, and 100 is given in the first three columns; the fourth column gives the number in a barrel, and the 5th column the price of a barrel.
3. Notice that it is much the most economical to buy them in barrel lots, if you can use so many. The reason for this is, that all manufactures of glassware have a uniform charge for packages, and a barrel has the largest capacity for the price of any thing used. Every barrel, large or small, costs us 35 cts.; a box, holding only half as much, costs the same. Thus by taking the largest barrels, well filled, we can give you the most value for the money.

4. We can not break packages of 100 or barrels at the price of a full package.

5. The most skilled packers are employed, and goods are delivered to transportation companies in good order; we will not, therefore, be responsible for any breakage.

Send your orders early, while we have plenty of stock and can maintain above prices.

A. I. ROOT, Medina, O.



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MAY 1, 1889.

No. 9.

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OUT-APIARIES—NO. VI.

ENGAGING SOME ONE TO HIVE SWARMS.

IF you expect some one of the farmer's family at the out-apiary to hive swarms for you, the matter of compensation should be agreed on in advance. As to what this should be, it is just as hard to say as it is in the matter of rent. On page 946, GLEANINGS, Dec. 15, 1887, are answers to the question, varying from 10 to 75 cts., Dadant & Son paying the latter price for hiving each swarm. Turn to page 9, Jan. 1, and read the very interesting article from C. P. Dadant, after which you will agree that, in their case at least, they are not so far out of the way in paying such high prices for rent and for hiving swarms. They have very few swarms, and they expect them to be hived by a man who has judgment to hive them in good shape, so they consider it a matter of policy to pay a good price for the few that do come out. If only one swarm comes out in a day or two days, you can well afford to have them hived at a cost of 75 cts. rather than have them go off. If, however, you have an average of 6 swarms per day, a man could make very fair wages at 25 cts. each, or \$1.50 per day, especially as the swarming does not continue all day long. Another thing that might make a difference, is the surrounding timber. It is one thing to hive a swarm from a low apple-tree, and quite another if the swarm hangs on the top of a tall forest-tree. In some cases it may be the better way to pay some one a fair price by the month or week. There is, however, an advantage in paying by the swarm, for then the one employed will be more sharply on the lookout not to let a swarm get away. There are, however, some who are so faithful that they will keep just as close watch, whether paid one way or the other.

In any case it is a good plan to pay so well that the one employed may feel a pleasant interest in the work.

If your queens are all clipped, then there may be less labor; but if the swarms are hived, fully as much intelligence is needed, but they may be managed in such a way that no hiving will be needed. I never had any one watch for swarms for me in an out-apiary but one summer, and then I had a young lady watcher, of little physical strength, but bright, and exceedingly faithful. When a swarm issued she immediately looked for the queen, which she rarely failed to find, caged it, and put it where the bees of the colony could take care of it, then wrote down in a memorandum-book the number of the colony and the date of issue. When I came to the apiary some time within every three to five days, she submitted to me her memorandum and gave me a full history of any thing unusual that had occurred.

LAYING OUT THE APIARY.

After you have made such an agreement that you think there will be no chance for any disagreement in the future, look your ground over carefully and decide just where you will place your hives, and it will be well to get every thing ready in advance so far as you can, so that, when your bees are brought on the ground, the hives can be set directly in their places. As I am trying to tell especially what is appropriate for those to know who have had no experience in out-apiaries, it is perhaps not appropriate for me to say much about the matter of arranging apiaries, for my readers are supposed to have experience in such things; but a little in that line may do no harm. It is desirable, if possible, to be able to drive quite close with a wagon, so as to load and unload hives, etc., conveniently, and I should like to have the place for driving up at the back of the hives, if it can easily

be so, in order that the flying bees may not find your horse in their line of flight. Of course, if your hives face in opposite directions, as is sometimes advisable, it may not be possible to get very near without getting in the way of the bees.



CHEAP ARRANGEMENT FOR BEE-STANDS.

The lay of the land may have something to do with the order in which the hives are placed; but whatever the arrangement, let your distances be accurately measured, and let every stand be leveled in one direction with a spirit-level, so there shall be no danger of combs hanging out of plumb. I like a very cheap stand that can be easily leveled, costing so little that I can afford to let it stand the year round, and thus avoid measuring and leveling each spring. Take two pieces of fence board or other board, long enough to hold two hives (if you don't want your hives in pairs let the boards be short enough for a single hive); lay them parallel on the ground, and level them, letting one be enough lower than the other (an inch or so) to allow the hive the proper pitch forward; then lay, across these, loose boards, that may be old, long enough to accommodate the hives.

C. C. MILLER.

Marengo, Ill.

I agree with you, friend Miller, that, after a stand is once leveled up, and fixed as we want it, we can not afford to move it and have to go over the same thing again. Now, in the stand you describe and illustrate you do not say that any part of it projects beyond the hive; but I am afraid, from the looks of the picture, that it does project; and one of the first things I decided vehemently in bee culture was, that no bee-hive should ever stand on a board, stick, or anything else, that visitors might step on. I need hardly tell you why. A great many times in visiting apiaries—that is, apiaries belonging to a certain class of people, I would find the hive sitting on a board or stick. After the grass has got so high as to conceal the board from view, somebody comes along and steps on one end of it, and the hive is tilted. Of course, they will not have presence of mind enough to get away until the bees are out in force to resent the insult. Another thing I decided on was, that there should be no holes under the stand where toads, spiders, snakes, or any thing else, could hide. Our chaff hive has no stand at all, as you know; and the Simplicity has none except the cover that is used as a bottom-board, and this is set on four half-bricks; and may be your stand is just as good as that everlasting Simplicity top or bottom board. But I have had my say about it, and the friends and yourself and the readers of GLEANINGS can now fix theirs as they have a mind to.

RAMBLE NO. 15.

A SWA-REE.

SEEMING much, recently, in the journals about I, We, Us & Co., the Rambler will say *we* after this. Somebody has said that *we* meant himself and his wife. All I have is my pony Nig, and Nig and I are together much of the time, so *we* means the man and horse in our case.

A hardware merchant, an enthusiastic amateur bee-keeper of Whitehall, had called upon the Rambler many times, and, in answer to many pressing invitations, one bright August afternoon found us at Mr. McLachlin's home. Whitehall is at the head of navigation on Lake Champlain, and also at the head of the raging Champlain Canal. The village presents the appearance of some of those Alpine villages in Switzerland, which the Rambler has visited (in his dreams). Streets run on terraces above each other, and many a gorge and rocky nook surprise the traveler. I found Mr. McL.'s residence surrounded with outcropping rocks, and in the rear of the house a rocky nook surrounded with evergreens, and provided with rustic seats and tables, which at the time seemed to lie around in some confusion. Mr. McL. explained that a swa-ree the evening previous had disarranged things. The Rambler was upon the point of asking what was the nature of a "swa-ree," when it occurred to him not to expose his ignorance before cultivated people, thinking he would pick up from conversation whether it meant swarming bees or something to eat or drink. We were just so tickled that we held our tongue (Nig and I), for Mrs. McL. then and there suggested that we have a swa-ree after tea. We (Nig and I) said we would help to the best of our ability.

Mr. and Mrs. McL. had a fine family circle of children, from a babe in the cradle to a boy eight or ten years old, and we were pleased to note with what care all questions were answered and correctly explained, and how bright and intelligent the children were, and interested in every thing the parents were. Church, Sunday-school, day-school, the bees, poultry, the cow, horse, and flowers, were all subjects of conversation. The careful answers to their many questions led them to put implicit confidence in the parents, and it was a beautiful home and family, so much in contrast with many a sad home in which the Rambler has been.

After tea, all prepared for the swa-ree; and the Rambler was in a sweat of consternation to find that the leading part had been assigned to him. To find relief we went out by the back door and interviewed the hired girl. As a leading question, we (Nig and I) asked her if she was fixing for the swa-ree. Said she, "Arrah, now, mon! go along wid yees. I niver shwore in my loife. It's a purty quistion yees be axin me—me, a mumber of the Catholic church, and to-morrow the day of confission—out wid yees!" Investigation didn't proceed further in the direction of hired girls with handy dish-cloths and broom-sticks. We went around the house and found the whole family, including the cat and dog and some of the neighbors, seated on the lawn near the bee-hives, and Mr. McL. said he wished me to conduct the swa-ree by explaining various matters of interest in a bee-hive.

"Well," said we, mentally, "if that's a swa-ree, the Rambler is at home." We explained that if

was late in the day to examine bees, but we would try not to rouse them too much. Mr. McL. sat down on the wheelbarrow and said his bees were very gentle, and told us to go ahead.

Upon opening the hive, it was evident, from the way things were glued, that the combs were seldom manipulated. A good amount of smoke enabled us (Nig and I) to get out the frames, make various explanations, and answer a whole volley of questions. The queen was luckily soon found and exhibited; also drones and drone comb, queen-cells, etc. It was solid interest all around us. The baby crowed, and the hired girl's opinion of us seemed to be on the rise as she beamed on us around the corner of the house.

The Rambler forgot he was the principal actor in a swa-ree, when, owing to a defective stand, the hive gave a lurch and slid partly to the ground, grinding up a few bees and making the rest mad; and from a vigorous remark from Mr. McL., as he went over backward on the wheelbarrow, with dog and boy mixed up with him, we judged the swa-ree had just commenced in dead earnest. The Rambler got his head into a grapevine, and secured a position to view the scene. The shouting, running, squalling, and kicking, "beggars description." Let me give you a faint idea with the pencil. The Rambler is now up on the swa-ree question, and is open for engagements.



A SWA-REE.

After the field was clear, things were righted and all unanimously voted, that, next to dynamite bombs, a swarm of bees could get up the liveliest kind of a swa-ree.

I found many things of interest with Mr. McL. He was enthusiastic on button-ball honey. The marshes on the lake, to the extent of thousands of acres, are covered with this bush, and a great amount of honey seems to be secreted. Quantities of basswood are also near by, and bees work here by moonlight when the flow is profuse.

Mr. McL.'s few colonies were wintered in a portion of his barn. A room on the north side, under the evergreens, was sawdust packed, and was a success. The Rambler has noticed that, whenever bees have been wintered in a room on the north side of a building, be it barn or dwelling, they usually winter well. The temperature does not change so much as when the exposure is to the south and to the sun.

Our ramble soon came to an end with Mr. McL. and his family; and as we bade them good-by we (Nig and I) little thought we should see them no more. A few months after, we regretted to learn

that they had all emigrated to Kansas. That so many of our enterprising men and bright families are leaving our midst for the West is many times looked upon with regret by the

RAMBLER.

Very good, friend Rambler; but I have a little fault to find with you this time, as usual. Perhaps it is quite clear to the rest of the brethren, but I confess I have not caught on just yet so as to know what "swa-ree" means. If it means a little talk on bee culture, why do the folks call it swa-ree? No wonder our good Catholic friend thought it meant something about swearing. It seems to me that friend McL. is a little heedless about the stands to his hives. I have heard certain folks tell about people who were so awkward that they would fall down while standing still; but I never heard of a bee-hive so badly perched on its stand as to keel over. Why doesn't he have stands made the way I have recommended in my reply to Dr. Miller on the preceding page? Another thing, you did not show us in the picture any of the rocks and terraces that you refer to.

THE VALUE OF EMPTY COMBS

DURING A RUSH OF NECTAR.

I WANT to tell the readers of GLEANINGS that I never realized the use of store combs as fully as last season. It will be long remembered by the bee-keepers of central Iowa as one of the poorest seasons for many years. All through June, July, and the fore part of August, when we usually have our heaviest yield, in vain did the little busy workers search from morning till night for the coveted sweet. It was not to be found. About the 15th of August the beekeepers in these parts began to wear very long faces, and in their "visions and dreams" they were haunted by the thoughts of lean purses and unpaid grocery bills, and more especially by the thought of feeding a large amount of high-priced sugar or see the bees starve. It was about the 15th or 18th of August that I carried my trouble to my good wife—a source from which I very often get relief. Said I, "What in the world am I to do? Here it is the middle of August, and no honey. I am pretty sure we shall have to feed all the bees in the fall to save them through the winter."

Said she, "What *can* you do? I am sure it will not help matters to worry; and, besides, we *may* have some honey weather yet; but if not, we shall have to submit."

Of course, I took this as being excellent advice; but when I walked away I felt pretty sure it was too late in the season for any surplus. Two days later I was walking down the path in the direction of the barn, expecting to assist a neighbor to thrash; but when opposite the apiary I heard a certain roaring sound in the air that the experienced apiarist at once knows to mean a boom on honey. My olfactories in the mean time also took in whiffs of the exquisite aroma of the coveted nectar (of course, that neighbor lost the use of one hand that day). Instantly all hands were engaged in putting on top hives and store combs to all colonies that seemed strong enough to store surplus. In just 24 days there was 1000 pounds put into the store combs,

One very strong colony, that had not swarmed, stored in the 24 days 150 lbs. of surplus, being 114 lbs. more than one other colony nearly as strong that had built their comb and stored their honey in section boxes with starters. So, now, I am more than ever convinced of the value of store combs, especially in a poor season. I had only 36 colonies, as I had made sale of my bees two years before that.

D. E. BRUBAKER.

Maxwell, Story Co., Ia., March 29, 1889.

P. S.—I have taken the 36 colonies out of the cellar, without the loss of one. On the 20th of March they were gathering pollen and honey from soft maple.

D. E. B.

Friend B., had your communication come ten years ago, when we were having hot discussions in regard to the value of surplus empty combs when working for extracted honey, we should have hailed it with cheers, and I do not know but that we might hail it with cheers even yet. Certain parties, and I think that Mr. Doolittle was among them, took pretty strong grounds, to the effect that surplus empty combs were of no particular value. It was at the time when we were claiming great advantages for the extractor, and I believe most of our discussions in the matter have generally closed with a decision something like this: We get perhaps a half more honey by using the extractor; some have said twice as much. Some of the older friends may remember that I insisted that a proper use of the extractor would give two or three times the number of pounds of honey, compared with our best appliances for getting honey in the comb. Now, in the above experiment, although it is not very conclusive, it looks very much as if *four* times as many pounds were secured by the use of empty combs. Of course, the circumstances were peculiar; but if such a thing happens again, what are empty combs worth? Had we better trade them off for five or ten cents apiece, or get still less by melting them up into beeswax, or shall we stick to them, keeping them, of course, nicely protected until the time comes when they will be needed?

UNFINISHED SECTIONS.

WHEN FILLED, EQUAL TO THOSE FROM NEWLY BUILT FOUNDATION.

I MANAGE to get as many unfinished sections each year for use the next year as I can, and not interfere with the present crop. Let us look at a few points. First, the sections: Some advocate cutting out the comb and using the section again. Now, the only objection to the use of unfinished sections is the section itself. The section gets brown, or tanned, and propolis gets in the fiber of the wood, that is difficult to clean out. If I could throw away the wood with convenience, I would do so. I would never save the section for its value. I manage to keep the wood in fair condition, and have never had any one object to them when filled with white honey. Next

THE COMBS.

If they are made nice and white one year, they will be just as nice and white the next. If they have any honey in them, extract it and let the bees

clean them out and they can not be distinguished from new combs when filled with white honey. In fact, it may be whiter than a new comb, for I find that sometimes they will not make quite as white combs as at other times. I have seen them make darker new comb by the side of white old combs. I am very positive that no one can tell old combs from new combs when they are ready for market, by the looks of the combs alone.

THE HONEY.

The honey will be just as well ripened in the old combs as in the new, or else the one who manages is to blame, not the bees. G. M. Doolittle, in *GLEANINGS* for Feb. 1, 1888, has said all that is necessary to say about ripening. Every one of those opposing the use of old combs knows that, in a can of extracted honey, the ripper and heavier honey settles to the bottom, while the greener and lighter rises to the top. The same thing occurs in a cell of honey while ripening. The ripper settles to the bottom side of the cell, and the thinner rises to the top of the cell. If the cell is left as the bees make it, and not turned topsy-turvy, the outer end is the higher, so that the heavier honey goes to the lower and back end; the greener and lighter honey rises to the top and outer end of the cell, so that bees can ripen it just as thoroughly in old as in new combs. Reverse these combs, new or old, and this action of honey is reversed. The thicker will come to the outer and lower end, and the thinner will go to the higher and inner end of the cell. I always keep the same edge of the comb up when I put them back on the hive that was up when they were made. I have no honey capped that is not well ripened, that I have discovered.

THE APPEARANCE OF THE SECTIONS.

The old combs, when filled with honey, and capped over, have a rather better appearance than new combs. The bees will fill the sections out a little fuller, and fasten the combs to the wood a little better with old combs than with new. I have had some experience and good opportunity to test the matter, and there are few things I am more positive of than that section honey is just as good and of just as fine appearance, made on old combs, as on new ones; and I am very positive that no one can tell one from the other, except by the wood of the section. I want to thank G. M. Doolittle for stating the fact on page 79 of *GLEANINGS* for 1888, that the field bees do not place the nectar in the cells themselves, but pass it to the nurse-bees and those that do the housework, because I was laughed at a year ago this last winter, and again this last winter, at a bee-keepers' convention, for making the same statement. Misery likes company, you know.

N. T. PRELPS.

Kingsville, Ohio, March 12, 1888.

Friend P., we are glad to get this report, but I do not gather from it that you have carefully tried both ways; that is, side by side with those mentioned. Have you placed new sections with full sheets of foundation, alongside of unfinished, to see which is filled sooner, and which presents the better appearance for the market? Remember that so good an authority as P. H. Elwood (and I think he said that Capt. Hetherington had so decided with him) says the honey they produce from unfinished sections of the year previous is usually or always sold as second rate.

MANUM IN THE APIARY WITH HIS MEN.

HOW HE DRILLS HIS BOYS TO MANAGE HIS OUT-APIARIES.

APRIL 10.—Well, boys, this is going to be a nice day—just the day to look over the bees for the first time after their long winter confinement. Leslie, you and Fred may go to the Monkton apiary. As Fred is to run that apiary this year, I want him to go there with you; and as you have worked for me six years you need no instructions except to teach Fred all you can and to look well to the stores and queens. I will take Scott to the Mills apiary with me, as he is to run that yard.

Well, Scott, here we are at the Mills yard. How nicely the bees are flying! You may put the horse in that barn there, while I light the smokers. Now, inasmuch as this is your first season with me, I think you had better look on a while and see me work. You will learn much faster in this way than to undertake to work by yourself, as I will try to explain every thing as I go along. The first thing is to remove the cushion. How much nicer it is to use cushions than to have the packing all loose, as I used to have it! There, you see I have the brood-chamber covered with a sheet of heavy cotton cloth, spread directly on the frames, and over this you observe a sheet of enamel cloth which covers half of the brood-chamber. By so doing, the bees can cluster under the enamel cloth whenever they wish to. The other half is simply covered with a cotton cloth and the cushion over all. By this plan the moisture can pass up through the portion not covered with enameled cloth, into and through the cushion. I will now remove this covering and give the bees a puff of smoke to keep them back. This is a fine colony, 8 spaces filled with bees, and all dry and healthy. As they have only 10 combs, we can not remove any yet and leave them honey enough. As we shall probably not come here again within 10 days, it is not safe to contract too much. Out-apiaries can not be managed as closely as the one at home, where we can look to them oftener. There, about all we can do at this time is to see that they have honey in plenty and a good queen, and to see that the bottom-board and entrance are all clear. You will notice that the combs are spread further apart than they should be for summer. I spread them 1½ from center to center in winter; but now we will have them only 1½, and during the honey-flow only 1½. There, now, I follow up with the division-board, return the cotton sheet, and cover the whole top of the brood-chamber with enameled cloth, because, as the bees can now fly nearly every day, they require no upward ventilation, but need all the warmth they can generate during the early spring breeding. Next I return the cushion over all. This swarm, you see, is now compact, and well protected from cold frosty nights.

Well, here is a swarm that is much lighter—only 6 combs covered with bees. From this I can remove two combs—you may carry them to the honey-house for safe keeping. As the bottom-board is covered with dead bees, I open the entrance wide, and with this paddle I scrape the dead bees out through the entrance. Yes, this queen is all right, and laying well. I will close the entrance again, as I do not allow them to have any larger entrance during the spring than I do in winter, which is 2

inches long by ¾ wide, while the summer entrance is 14 inches long by 1¼ wide.

Here is a queenless stock, but it is quite strong. We will remove three combs and clean them out, as we may find a light swarm with a queen that we can unite with these. We shall then have a good swarm out of the two poor ones. One good swarm is worth more than a dozen poor ones.

Here is a light stock with a good queen. We will remove all the unoccupied combs, which takes them all but three. I will now take these three combs and bees and set them in the queenless hive, there I will uncap this card of honey and place it between the two lots of bees. It will serve as a peace-maker. In a short time the queenless bees will discover that a queen is near, and will soon be making friends with her bees, and unite without further trouble to us.

Here we have a hive that the cows turned over when they broke in here. I presume they are all dead. No, there are a few bees—about a teacupful. The queen looks like a young one. Yes, the record says she was hatched last July, and from No. 42, one of my best breeding queens, so I will just cage her, as we may want her in some other yard, or I may have an order for a queen of this kind. There, you see I mark the cage No. 1, as this is the first queen caged, and in my book I say, "Cage 1, queen one year old, daughter of 42." Now, if I should send this queen to any one, or use her myself, I shall know *who* she is. As you see, I keep a record of all my queens, so that I know their age and pedigree.

Here we have another of those strong colonies full of bees and but little honey. Here, I remove two empty combs, and in their place I put in two cards of honey.

This finishes up this yard. You may get the horse while I take a look through the yard to see that we have not left combs out or neglected any thing.

You have now got an idea of what I want done the first time we look the bees over. I shall let you and Fred go to the Eaton yard to-morrow while Leslie goes to Ferrisburgh.

APRIL 20.

Now, boys, we will start out again to-day and see what the bees are doing. There is not much to do to them, but it is best to go around and see to them. One to a yard will be enough this time, as all there is to be done is to see to the stores and give more combs where needed. Should you find any robbing going on, contract the entrance to ¾x¾, and put straw or hay in front of the hive, so the robbers will be obliged to crawl through it. That will discourage them as quick as any thing. Look to those we united, to see if the queens are all right. Should you find any that are queenless, and are strong in bees, give them a card of eggs and larvæ from some strong stock that has a pure queen.

MAY 10.

Well, boys, we have been confined to the shop for some time, and it will do us all good to get out among the bees. Our foundation is all made, and nearly all the sections filled with it. We can finish them rainy days. We shall now spend the most of our time in the apiaries, cleaning up and painting hives, etc.

I will take Will with me to-day, as he has not worked with me this spring. As the old bees have all disappeared, and nothing but young bees are in the hives, it is just the right time to clip the queens

that were not clipped last fall. Here we are, Will, at the Meack yard. These hives being all new, you will not have much painting to do this year, except to give the caps one coat. Now I will let you work while I look on and tell you how to do it. This is a good stock, with seven combs of brood. The record says this is a last year's queen, hence she is one year old. There she is! Now catch her by one wing with your left hand; that's right. Now just let her rest her feet on the lapel of your coat; that will stop her fluttering. Now clip off half of one wing. You see, it is a simple job. Let her go among the bees again. This swarm should have one more comb. Place it outside of the others. Some bee-men would tell you to spread the brood-nest and place it in the center; but I do not approve of it so early in the season. It will do to spread the brood during the honey-flow whenever we have occasion to give a colony empty comb. Next replace the sheets, both cotton and enamel cloth, and tuck down the cushion all around so as to keep them warm, as we now want to induce brood-rearing as much as possible, because the eggs that are laid now, and for the next 20 days, will produce the bees that will gather our surplus; hence we should do all we can to induce the queens to lay in every comb.

Here is a swarm that is not very strong—only four combs with brood in them. You may take out that best card of honey and uncap half the honey on one side, and place that side next to the bees. That is one way of feeding to stimulate brood-rearing; but you see in this case the queen is laying all the eggs the bees can care for, hence the trouble with this swarm is that they are short of bees, so we will go to a very strong colony and take out a few young bees and give to this colony. There, let me show you. This colony is so strong we can take out quite a few bees, and here is a card of nearly all hatching brood, which is also well covered with young bees. I will take it out and hold it in front of the hive—so—and with my knife-handle rap on the frame; that causes the old bees to fly off, leaving only the young bees. Now I place comb and bees in this light stock. Next I will go to that strong stock on the next row, and get a few more young bees on a comb, and this time shake the bees off in the light stock and return the comb. There, now you see I have helped this light stock wonderfully. It will now come up very fast, and perhaps the next time we are here we can give them another comb of brood and what young bees are adhering to it. By this method we shall be able to work up this colony to a good strong one by the time clover blooms, without damaging those from which we take the brood and young bees.

Here is a good colony, but you will find them queenless. How do I know? you ask. Well, I will tell you how I know. You observe the bees are more or less scattered all through the hive. They appear uneasy—restless—and you notice they make a peculiar mournful noise, and fluttering of their wings. Yes, there are queen-cells capped, and not an egg to be found anywhere.

Let's see: The record says she was two years old last summer, hence she would be three years old now. She has probably failed from exhaustion, or perhaps by accident. You may cut out all their queen-cells, and we will give them a card of eggs and larvæ from some of our breeding stocks and let them rear a few cells for us, as we may need

them the next time we are here. Now make a record of this. Let me show you how I do it. There, see:

queen; put in
May 10, 1889. No. 2. Q. P. I. eggs from No. 16.
for Q. C.
queen-cells.

Here is a colony that seems to be very strong. See how lively they are working, getting both pollen and honey. Yes, just as I expected, the hive is full of bees and brood in 9 combs. These bees are what are called leather-colored. They are almost brown. There is the queen; how dark she is, and how large and lively! Do not clip her, as she is just the kind Mr. Ira Barber likes; and as he has ordered a queen for breeding, I will send her to him next week. By that time it will be time to be thinking about getting queen-cells started, as we shall want a few early queens in this yard; therefore we will leave a record here in the honey-house, which will show that the queen from No. 63 is to be taken out for Mr. Barber, and the one in No. 28 for Mr. J. H. Larrabee.

When you come here next week you will simply have to see to the stores, because they are consuming honey very fast now, and it won't do to let them get short. You will also give those more comb that are not already full. A. E. MANUM.

Bristol, Vt.

To be continued.

Why, friend M., you make me feel as if it would be the nicest kind of fun to be one of your boys. I wonder if you are always as good-natured about it. Suppose some of them should forget and leave a lot of combs exposed, and they have a terrible time of robbing, and some of your best queens are lost. What would you do then? Your idea of having an enameled sheet to cover only half of the brood-chamber, so bees can take their choice, reminds me of my poultry-house, where the roosts at each end run out under an open shed. Just as soon as the weather becomes mild, the fowls walk along on the roosts out into the open shed; but when the nights are frosty and cold, they come into the warm inner apartment. I do like the idea of letting our bees and fowls—ay, and horses and cattle also—please themselves in regard to being outdoors or in. My brother in California went to the trouble of making good dry stables for his horses and cattle. His neighbors laughed at him. Thereupon he left the doors open so the animals could please themselves. As they all stayed outdoors in the rain in that warm climate, rather than go into their comfortable stables, he decided that the neighbors were right—that there was no particular need of stables in that locality.—Your plan of uniting a queenless colony with one weak in bees having a queen, is good. A colony that has been some time queenless will almost always take up with any bees that have a queen. But your comb of honey, with the cappings shaved off, I am pretty sure, from what experience I have had in a similar line, would make a pretty sure thing of pleasant relations among the strangers.—When you spoke about giving a comb of nearly hatching brood to a weak colony, I began to question the wisdom of your course; but when you spoke further about giving them a few more young bees from a third colony,

"There," said I, "that fixes it exactly." I often decide a colony to be queenless in just the way you describe, and sometimes I can tell by the actions of the bees around the entrance.—Very likely Ira Barber will be pleased with a dark-colored queen that produces leather-colored bees; but unless you know your man when you send out such a queen, you may get a letter from him that will make things lively. The queen would suit me, however, to a dot.

DEBT AND CREDIT.

OWE NO MAN ANY THING, BUT TO LOVE ONE
ANOTHER.—ROM. 13:8.

THE matter of doing business cash down, and no credits, has been discussed over and over again; and many large enterprises are conducted, or at least they profess to be, on the basis of cash in advance. The principal argument is, that no one can sell goods at as close margins, and give credit, even limited credit, as they can where they have the cash in hand, before the things leave the store. A good many of our supply-dealers, I believe, have adopted this plan; that is, they do not ship any goods until the cash is first at hand. Now, while this may be every one's privilege, and while it may be true that nobody has any right to find fault if a man decides to do business in this way (so as to give close margins), I do not think, or at least it does not seem to me, as if it were a Christianlike way of doing. One who has a real love and kindly feeling for his neighbors must be accommodating, within the bounds of reason. Selling goods on time, or lending money, if you choose, is a good deal like lending tools. The matter of lending tools has been discussed somewhat in these pages already; and I believe the final decision has been that one must lend his tools—at least to a *certain extent*, to be considered a good neighbor, or, if you choose, a Christian. A man who has built up a beautiful place, and who has succeeded in getting a beautiful farm, with all modern appliances, would, as a rule, be hated, rather than loved, in his own community, if he used every thing he owned, simply for self, and entirely shut down on any sort of accommodation to his neighbors. It is a good deal so in selling goods.

At one time in my life I became so much embarrassed with outstanding accounts that could not be collected, that I decided I would start in business again, and have it all cash down or cash in advance. Two obstacles stood in the way of carrying this out. One was, that it seemed very hard and unfriendly to refuse a little accommodation to those who had for a long time paid cash in advance, and with whom friendly acquaintance had sprung up. Another thing, when there came a boom in business we were oftentimes unable to send the goods as promptly as our customers had sent the cash. We would not trust them 24 hours, but they intrusted us with *their money*, and even then did not get their goods for days and may be *weeks*. Is this fair or Christian-like? Sure-

ly not. At other times, somebody sent money for goods without knowing just what they would cost. Now, if a man sends \$9.00 for something that is worth \$10.00, is it right to hold his \$9.00 and keep him waiting until he sends the other dollar? To be sure, it is not. If, then, it is the duty of a Christian to give credit to a certain extent, who should have credit, and who should not? Here is where the great trouble comes in. To send out goods right and left, to everybody who asks for them, or who makes promises, would be the height of folly. Many of our young friends who have gone into the supply-business have discovered this to their sorrow. In the bee-business, in the small-fruit business, in this whole business of raising crops, it has been well said that it is more work, as a rule, to sell the product and *get the money* than it is to raise the crop. Raising the crop is only one part of the business; and the great trouble is, *whom* shall we trust, and *how* shall we trust? The thought that perhaps I might be able to help some of the friends who are studying on this problem has moved me to write this paper. In our business, looking after accounts, and deciding whom to trust and whom not to trust, has been the most wearing and fatiguing, perhaps, of any one branch of the business. It is this branch of our business that has broken down my health, perhaps, more than any other one thing; and when we finally decided that I must delegate this serious and difficult matter to somebody else, the question came up as to who should undertake it. We finally decided that our oldest and most experienced book-keeper should undertake this, under the advice of Mr. Calvert and myself, when the case seemed a difficult one to decide. As a matter of course, when I let go of the "wheel," if I may use the expression, and intrusted it to somebody else, complaints came in, and it became necessary to frame a set of rules for the guidance of the book-keepers. These rules were those that had been deduced from long experience; and after they were framed they were tested. When we were forced to conclude that we had trusted somebody unwisely, the book-keepers were asked to go back and see *why* this man was deemed worthy of credit; and if our rules were unwisely framed, they were remodelled.

To get the matter before us, let us suppose, as I have done once before, that obtaining credit is like going to your neighbor and borrowing a wheelbarrow. You commence:

"Mr. A, I am a little ashamed to come on such an errand; but just now things are in such a shape that the use of your new Daisy wheelbarrow for half a day would save the price of a good man. Now, if you prefer not to lend it, say so without any hesitation, and I assure you there will be no unkind feelings; or if you can not spare it, that ends the matter."

In the above transaction the neighbor has shown a fair, manly, Christian spirit; and if Mr. A decides he can not spare the wheelbarrow, or decides that he can not lend it

at all, it is his right, and neighbor B should go home pleasantly without it, if his neighbor so decides. It is true, that B might, as he goes off home without the barrow, say to himself:

"Well, I think he showed a mean, stingy spirit. If he does not know me well enough to know that I would return his wheelbarrow exactly at the time I promised, and entirely unharmed, he can keep it till it wears out, and I will never ask him for it again."

B *might* say this, but it would be a wrong, unchristianlike spirit if he did say it. Now, let us suppose that it is *money* that B wanted instead of a wheelbarrow. Ought the case to be materially different? Mr. B agrees to pay for the *use* of the barrow. If he asks for money to be kept for any length of time, he ought also to be just as willing and just as anxious to pay for the use of the money as to pay for the use of the wheelbarrow. You may say that money is not injured by being loaned. We have found to our sorrow, however, that it *is* often "injured." Sometimes it takes quite a part of the principal to get it back again, and a deal of hard, wearing, and fatiguing work. Sometimes it never comes back. How many of you can testify to this? Suppose, now, the wheelbarrow came back all right, but the owner has charged an exorbitant price for it for just half a day. In this case the fault is on both sides. There should have been a plain understanding before the wheelbarrow left its owner, as to what the rent should be. You may say it looks little and small; but, my friends, it does not look nearly so little and small as it does to have a long standing quarrel because there was no understanding at the outset. During my recent travels I felt obliged to decide not to stop at a hotel until I had first asked what the charges were. Some of you may think this looks little and small. I can not help it if it does. After I knew what I was to pay, I could be friendly and neighborly with the landlord, and sometimes with the whole family, without any fear they might take advantage of my good nature.

We now come to another difficult matter. Suppose that B finds it is going to require a *whole* day instead of half a day. Must he go half a mile in order to get permission to keep it half a day longer? By no means. Send the smallest boy over to A's, with a scrap of paper containing something like this:

"Neighbor A, it would be a very great accommodation indeed if I could keep your wheelbarrow half a day longer, and on the same terms. Will it discommode you if I do so?"

If neighbor A scratches at the bottom of the same paper, "Not in the least," it is just as fair as if it were returned at the time promised. The same thing applies to your money. There is nothing out of the way, or injurious to your standing or credit in keeping money longer than the agreed time, providing you get *permission* of your neighbor to keep it. In fact, you may get the time of payment extended seven times, or seventy times seven, for aught I know, providing you make an arrangement that is

agreeable to the neighbor who has loaned it to you. To neglect to do any thing about it, or to write any thing at all, however, when the agreed time comes around, *is* damaging to your credit, and it must be damaging to any one's conscience. It is not as bad, it is true, to say when the time comes around, "Neighbor A, I have not got the money, and can not get it just now, and you will have to give me more time;" but it seems to me this is not quite the thing after all. The money belongs to your neighbor, just as the wheelbarrow belongs to him, and you have not much more right to keep it without permission than you have to take property without permission. You may not agree with me in regard to this; but if you want your name to be A No. 1, and if you want all business men to spring with alacrity to ship your goods, whether you send the money with your order or not, you must *build up a reputation* for promptness and reliability.* If you want to do this, be sure that some sort of an arrangement is always made whereby payment can be extended, and do this in ample time before the money is due. Most business men are willing, so far as my experience goes, to grant almost any thing, provided they are *notified beforehand*. Another thing that will help you greatly is to be on hand promptly with the *interest*, if you can not pay the *principal*. The record of our ledgers shows that the man who pays his interest promptly will sooner or later pay the principal.† The man who complains in regard to the amount of interest, or who maintains that he should not pay *any* interest, or who *neglects or refuses* to pay interest, usually never pays any thing if he can get out of it. Now, I do not say this because I have a selfish motive in it, but because I think it will be helpful to you all. Broken promises in paying debts are almost as demoralizing as broken promises in signing the pledge. One gets conscience-hardened in a little time, if that is the right term. First, he persuades himself that the interest is altogether more than it ought to be. The next is to decide that he ought not to pay any interest at all; and finally he unblushingly repudiates all obligation, and refuses to pay either interest or principal, and goes along through life *trying* to be happy, and *trying* to quell the remorse of a guilty conscience. To come back to the wheelbarrow again:

Suppose that B should keep the wheelbarrow without saying a word until A could not get along with his work any longer, and went after it. Now, our ledger shows abundance of instances where the result is something like this: First, B says it will cost him the price of the wheelbarrow to have to return it as he promised, therefore he kept right on using it without saying any thing. Again, he says, "I got through with it just as I agreed;" but neighbor C wanted it, and he promised to get it around

* "A good name is rather to be chosen than great riches."—PROV. 22:1.

† Our ledgers also show that, as a rule, he who answers promptly every statement in regard to his indebtedness, usually pays all up, sooner or later.

to your place so quickly you would never miss it at all. I am not in the least to blame. The fault is all on C's part." Quite a good many stop right here, and stoutly insist that they are in no way at fault, forgetting, apparently, that the barrow was loaned to *them* and to nobody else, and that they alone are *responsible* for its return or for its value. Again, B will say, "The wheelbarrow was in my barn, and the barn was burned up. Surely you can not blame me for it, for the barn was struck by lightning." Sometimes B adds, "As I lost the whole barn, with all there was in it, you surely can bear the loss of the wheelbarrow." Perhaps A suggests that, as B has had troubles and misfortunes, he will not think of crowding him now, but it seems to him that some time in the future, when B has caught up from the loss of the barn, A thinks he ought to have another wheelbarrow. Now, I have known B to say, a great many times, before they got through, "I wish you had never loaned me the wheelbarrow at all. I never used it a bit, and it did not do me a particle of good."

Well, suppose A should say to himself (I hope he is a gentleman, and will not say it out loud), "I do believe neighbor B is right. It *would* have been better for both of us if I had refused to lend my bright new wheelbarrow; and I declare, it has so often resulted in just about this way, when I have *tried* to accommodate and to do a *friendly* act by loaning tools that it has been no accommodation, and I have just made enemies of my neighbors. I believe I will never lend any more tools." Dear friends, the record of our ledgers has so often shown, in plain black and white, that loaning a man money (or what amounts to the same thing, letting him have goods on time) has only resulted in getting *him* into trouble without doing him a particle of good, that I have been tempted to decide we had better stop it altogether. But a better spirit suggests, "No, my friend, do not stop it altogether, but be more careful in the future." Be careful that the accommodation you feel inclined to grant is not going to bring trouble on both sides.

Before dropping this point I want to say that, of late, quite a few have censured me rather severely for having trusted them. Some of them have been so unkind as to say that it was only a sharp plan of ours to get them into a trap where they could not help themselves. This has come up a good many times when I have urged my right to interest as well as principal. We simply ask for the interest we are obliged to pay—nothing more. When a good many friends find themselves unable to pay at the time they promised, or expected to, I have often written back, "My friend, we are in great need of the money, and really must have it; but to relieve you from your cramped position, as you have stated it to me, I will, if you wish, go to our bank and borrow the money for our own needs, and you may, if you choose, pay me exactly the interest I have to pay at the bank." Now, it is true that a great many—yes, by far the larger part—have written me letters of earnest

thanks for relieving them from the necessity of going out to borrow money, and they have in due time paid interest and principal, saying they would never forget the kindness I had done them. The larger part have done this; but still *quite a good many* have failed to pay me back, even after I have tried to help them, and have talked hard besides.

Now, then, if we are to do a credit business, whom shall we trust? Dear friends, your nearest bank will answer the question for you, and in a plain, common-sense way. Some of you, I know, feel bitter toward our banking institutions, and call them "mon-eyed aristocrats," and such like things; but, my friends, this is all wrong. If you do not like banks, it is your privilege not to patronize them. But if you do patronize them, and they accommodate you according to business rules, treat them as friends and neighbors. You may say that banks are expensive; but it is your privilege and duty to give up the purchase of things you can not well afford, without reflections on your fellow-men or reflections on the great Father in heaven for giving you only a *humble* station. Do you ask what the conditions are for accommodation at the bank? Well, I presume they will be something like this:

The cashier will say, "My friend, where do you live, and what property do you own?"

If you reply that you own a farm or a house and lot, or a store, the next question is, "What do you consider your property worth, and what incumbrance has it in the way of mortgages, etc.?"

If your property is of a kind likely to burn up, you will be asked if it is insured; and if insured, the summing-up will be, "If you should get sick, or die, or if your house should burn up, or if a cyclone or flood should come upon you, are you in such shape that you would still be able to pay back this money?"

If you are unacquainted with the cashier, he will ask you to call in some mutual acquaintance—somebody to prove your identity, to attest to the truthfulness of your statement—the postmaster, the station agent, or the storekeeper, or people who are known to the banker, and who know almost everybody in the vicinity. Now, if you have had difficulty with any of the above three, or if you owe them money and can't pay it, I shall have to admit that your chances are slim for getting the accommodation you ask. And here we see how important it is that you live according to the spirit of the text at the head of this talk. If you have not done so, you have no right to complain.

Now, suppose you do not own any property at all—you are renting a place. In that case the cashier would be foolish if he gave you credit unless you brought forward somebody known to him—some man of means to sign a note with you to go your security. A great many of you will say right here, "I am not going to ask *anybody* to sign with me." Good! A. I. Root is one of that very sort. But, my friend, if you say you are not going to furnish a signer, you must not

complain if you can not get the accommodation you ask for. You must either get a signer, or accumulate property enough to make it easy for your *wife* to pay your debts if you die suddenly. If you can not do one of the two above things, it seems to me if you are a good Christian you ought not to complain because the world does not see fit to give you credit.

The rules laid down for our book-keeper are just in accordance with the above, only we are a little more liberal than banks in general. This book-keeper, of many years' experience, is a Christian woman of good judgment, and one who has a kindly love for all humanity. In this very work of which I have told you, it is her constant end and aim to decide all these matters in a Christianlike way. Mr. Calvert, her aid and adviser, is also a thorough-working Christian—a man who asks God day by day to help him to love his neighbor as himself. Perhaps they make mistakes. They do not, of course, know all the old friends of GLEANINGS just as I do; but I assure you that we all stand ready to correct any mistake at once, as soon as we are informed of it. I told you we were more liberal than the banks. It is this way: We have quite a few customers who are not men of property—who have very little indeed to fall back on in case of sickness, death, fire, cyclones, floods, etc.; but this class have gained credit by being *prompt* and *careful* about paying all *small* balances. They are often quoted, "Has always paid exactly according to promise," and I tell you this one simple record goes a great way. The man who has always been "faithful in small things," certainly will be faithful in larger ones; but of late a good many facts have come to light, showing that it is *sometimes* a mistake and an unkindness to even these friends to give them *too large* a credit. Very often I pencil on letters, "Why was this man trusted?" The letter comes back to my special box, marked something like this: "He was always prompt, and fully up to promise in small amounts, say from five cents up to five dollars, until we decided to trust him \$25.00, then he had bad luck, and wrote us once or twice about his misfortunes, and now we can't get any answer from him at all." Now, friends, the fault was ours. To be kind and helpful to this individual, our duty was to tell him that we did not feel justified in trusting him to so large an amount as \$25.00, from what we could learn of him, even though his past record had been excellent. Very likely he would have been greatly hurt and pained on receiving this answer; but it would have been much better for all parties, just as it was with the wheelbarrow, had neighbor A stated kindly but firmly that he preferred not to lend it; and, my friend, if you know the neighbor who comes to borrow your wheelbarrow is notorious for breaking and injuring and keeping every tool he gets hold of, I think the kindest act you can do is to tell him pleasantly, that, if he will excuse you, you would rather not lend it.

Some years ago I wanted accommodation at our bank. The cashier questioned me,

and finally told me he did not see how they could consistently let me have what I wanted, especially as I objected to giving a signer. I urged, however, and he finally said that perhaps they could get around their rules in some way. After a little reflection I decided, however, and spoke out something as follows:

"Look, here, my friend, I do not want to be any exception to your regular rules. I want just as good terms as you offer to anybody else, but no better. If your rules are as you have stated, I prefer to abide by them;" and I went without the money I wanted, and felt then a good deal happier, and have ever since. And you too, my friend, will feel better and happier and *manlier* to abide by the established rules than to beg to be an exception because you are a "near neighbor," or an "old friend," or something of that sort. I am sure a little foolish pride often comes in here. Men who are worth their thousands do not feel hurt, nor object to being questioned; and I believe it is generally laid down that the man who flares up and gets offended, or shows anger because he is asked to submit to the regular established business customs in the way of debt and credit, is, as a rule, found to be unworthy of *any* credit.

Some years ago a good friend of mine, who is in the banking business, wrote me a kind letter. After excusing himself for taking the liberty, he said he would like to urge upon me the importance of keeping a little more ready cash ahead, so that I might not be so often in cramped places. He said it injured my standing, not only as a man of *business*, but also my reputation as a *Christian*, to have the world see that I was cramped or pinched, or to be inquiring here and there for money. Now, this friend is not a Christian; but from a business standpoint he saw that I was dishonoring Christ Jesus the Savior by continually paying out my money as fast as I got it, or a *little faster*, so that I was every little while crowded. I thanked him, and told him that I would try to show him that his advice was not thrown away. In a little time I had quite a sum of money in the bank, saved up for a "rainy day," as the expression goes; and during that summer I was enabled to take advantage of many opportunities in the way of purchases, that I had never been able to manage before; and I resolved then that I would never more dishonor the Master by want of ordinary business prudence; and let me tell you, my friends, that, although we like to do business, and like to sell you goods, I would urge and implore you, not only for your *own* good and happiness, but for the sake of *Christ Jesus*, not to be in such haste to make such investments that you *cramp* and cripple *yourself*. Read over again the little clause in the fore part of our price list, about borrowing money to buy goods.

A few have objected to 8 per cent interest. Some have said they did not think we were *obliged* to pay it; and a few have said that we are not very smart in business or we would *not* pay 8 per cent interest. My friends, we can get money at 6 per cent by

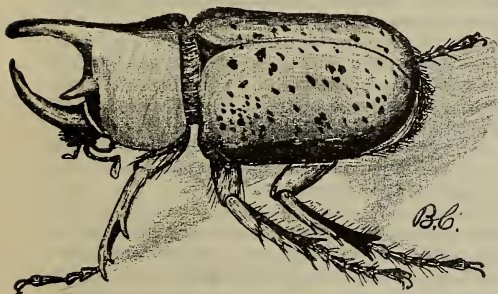
keeping it a year or more, and by furnishing a signer. As we do not get it at that rate at present otherwise, I prefer to pay the 8 per cent, especially because, by so doing, I can better fulfill the command of the little text I started out with—"Owe no man any thing, but to love one another."

GREAT RHINOCEROS BEETLE.

NOT AN ENEMY, AFTER ALL.

I HAVE the following letter from E. Wetherold, Bryantown, Md.:

Respected Friend:—I send you a beetle which is a curiosity to me, as I have never seen one like it before. I wish you would describe, illustrate, and give a sketch of its mode of life and habits for the readers of GLEANINGS. I am sure it would interest all. It was found in a decayed locust-tree which has been gradually dying for some years. Are these insects the cause of the death and decay of the trees? Locusts in this State are seriously injured by what are called borers. I have never seen these borers, but supposed them to be quite different from this beetle.



GREAT RHINOCEROS BEETLE, NATURAL SIZE.

This beetle (see cut) is one of our most formidable-looking insects. It is known as the great rhinoceros beetle (*Dynastes tityus*, Linn.). Its form, size, and markings are well shown in the excellent figure which I inclose. It is greenish in color, often with a yellowish tinge, with black dots. The ends of the horns and the legs are black. It is reported that some of them are uniformly brown, like our May beetles. The lower horn can be moved so that, as it comes against the upper, it might form quite a formidable weapon of offense and defense. On each side of the pro-thorax is a short horn, one of which shows in the figure. Indeed, though perfectly harmless it is about as startling in its appearance as any insect I know of. It is a Southern species, and has been found from Maryland to Missouri, in southern Indiana, and to the Gulf. The grubs feed on decaying wood, and so this one does not destroy the Maryland locusts. The beautiful locust-borer, a trim, long-horned beetle, yellow and black in color, is the real enemy, and it is a serious one all over the United States. When the trees decay from the attack of the locust-borers, then this rhinoceros beetle finds in it a suitable nidus for its eggs. Thus it is not strange that our friend Mr. Wetherold found this one as he did. The female looks like the male, but has only a tubercle in place of the long horn. I should be very grateful if some Southern friend would send me a female. I am very glad to receive all such insects, and will gladly describe them when sent to me.

A. J. COOK.

Agricultural College, Mich.

THE SIZE OF BROOD-CHAMBER.

DADANT STRONGLY IN FAVOR OF LARGE-SIZED FRAMES.

IN the answers on the number of brood-frames in the hives, page 224, we give the larger number, while Messrs. Doolittle, Hasty, and, I could add, Gravenhorst, as per his article, page 210, use the smallest-sized hives. Let me tell how I came to the conclusion that large frames and capacious hives give better results than small ones. When I arrived in this country, 26 years ago, I had never seen shallow hives; so my first hives were made of the same size as the Debeauvoys, 12½ x 14, which was about the same as the American, 9 frames to the hive. A little later I tried the Quinby hanging frame; then enlarged both kinds, to place at the sides glassed surplus boxes, as per the idea of Mr. Jasper Hazen. But seeing that bees were reluctant to work in the side boxes I replaced them with frames. My American was thus enlarged to 14 frames, and my Quinby to 13. But as my best queens had too much room in these Quinby frames, I reduced them to nine or ten, with one or two partition-boards besides. Yet as I had begun to raise bees for sale, and as most of my customers wanted them in Langstroth ten-frame hives, I had to comply with their preferences, and introduced this size in my apiaries, being thus enabled to experiment on three different kinds of hives. I had begun, also, to raise Italian queens for sale, using at first small nuclei with combs 5 x 5 inches. But as I had to cut my combs to give brood or honey to these nuclei, I got the idea of dividing a few of my large Quinby frames in two equal parts, which could be taken apart or reunited at once. A small engraving of this device appeared in GLEANINGS for March, 1874, page 28. I made 25 such nuclei, every one of 11 half Quinby frames capacity. I used these nuclei with the best results as long as I raised queens for sale. It was an easy matter to keep them strong and well provisioned by borrowing from those of my hives in which I had introduced some of these divisible frames.

In the latter part of summer, as fast as one of these nuclei was deprived of its queen, its bees were given to another, and so on till the eight or ten left had a sufficient number of bees for a good wintering. Yet, while these small hives wintered perfectly, I have been unable to build them up in spring to the strength of my large hives; for at the beginning of June, while my Quinby had, on an average, seven or eight combs full of brood, my nuclei had hardly brood on eight or nine half-combs.

Having narrated these facts lately in the *Revue Internationale*, of February, 1889, its editor, Mr. Bertrand, added in note:

"It is a similar observation, made about ten years ago, which has definitively convinced us of the superiority of the large frames. Supposing that the keeper of one of our apiaries desired to have bees of his own, we gave him a swarm and a few hives, known under the name of Vaudoises, and containing 13 frames 11 x 10 inches. This apiary of our bee-keeper, placed on our own ground, side by side with our own bees, increased in number with time, but these small Vaudoises have never equaled, neither in population nor in product, our large layers" (14 to 16 frames, of the American size).

There is in the A B C a very good explanation, with engravings, of the causes why bees raise less brood in the Gallup than in the Langstroth combs, so we can easily understand why Messrs. Doolittle and Gravenhorst think that a good queen can not lay more than 2200 eggs daily, while I have often noticed some laying over 4000 eggs for weeks.

The opinion of Berlepsch on this matter, as given by Mr. Gravenhorst, is of very small account, for the frames of the Berlepsch hive are of about the same size as those of Mr. Gravenhorst. I may add, that a great many comparisons have been made in Europe between the 11-Quinby-frame hives and the Berlepsch, and the results were always wonderfully in favor of the large Quinby; in fact, they showed from two to three times as much honey per colony in the Quinby, in the same apiaries. No doubt Mr. W. P. Root, your translator, has noticed these reports in the *Revue Internationale* of Switzerland, and in the *Apicoltore* of Milan, Italy. The journal of the Marches, Italy, *I Api e i Fiori* (The Bees and the Flowers), was founded in view of spreading the wide hive under the name of *arnia marchigiana*. But some bee-keepers, in this country, object to large hives for comb honey. My first comparisons were begun about 23 years ago. At that time I used slatted honey-boards, on which my glassed honey-boxes were placed; but after noticing that bees were slow to ascend in the boxes, I dispensed with honey-boards by inventing T supports made of plasterers' laths, under the edge of which I nailed tin strips above, 2 inches wide, to support my boxes directly above the brood-frames.

When—twenty years ago—Adair invented his sectional honey-box he sent me one for a pattern, and I discarded the square glassed boxes. I had an extractor; but as the people were reluctant to buy extracted honey I produced more especially comb honey till a part of the prejudice was overcome. The size of my hives was far from being a hindrance, for I took sometimes 150 lbs. of spring comb honey from my best colonies, although our spring crop is gathered on the white clover exclusively, since we have very few lindens around here.

As our queens have room to lay from 60,000 to 80,000 eggs in 21 days, the population is so large that we do not need to contract the brood-chamber, the workers being too happy to find their room enlarged. We have had swarms containing 60,000 bees or more, if we estimate them by their weight, while Mr. Gravenhorst speaks of uniting two of his swarms to get 44,000 bees.

Our experiments are still continuing on the three kinds—11-frame Quinby, 10-frame Langstroth, and 14-frame American; not on two or three of each kind, but on 50 or more. When we extract we begin with one kind; and when it is done we figure the result, dividing it by the number of colonies. We do the same for the other kind, placed side by side in the same apiary. Then when we say that our large Quinby gives us better results we know there is no mistake. To sum up the above we will say that, according to our quarter-century's experience—

1. In a large hive the queen, in spring, begins to lay earlier, and lays more than in a small one, since the population wintered is larger.

2. At the beginning of the spring crop, the number of bees is so large that, as soon as the surplus

boxes are placed, the bees ascend into them without needing contraction.

3. As the queen finds sufficient room to lay, she goes upstairs so seldom that we dispense with queen-excluders.

4. If the boxes are furnished with combs and comb foundation, and more room is added before being needed, all swarming will be prevented, except when the bees replace their queens during the honey crop. As we do not get more than two or three per cent of swarms, we dispense with watching our bees closely.

5. As bees swarm but little in well conducted large hives, not only the time and work of the bee-keeper are spared, but the day of swarming is more profitably used by bees in going to the fields and getting, according to circumstances, from 5 to 20 lbs. more honey per colony.

6. The few swarms obtained are so large that they need hives of full capacity, and one or two surplus boxes, in which we sometimes harvested 100 lbs. of honey or more.

7. As all the queens have a sufficient space to lay to their utmost capacity, it is an easy matter to breed from the most prolific, prolificness being the first qualification of a good queen.

8. As we leave about all the honey stored in the brood-chamber, our bees have some spring honey left for winter; and as this honey is of the best quality they winter better on it, while we dispense with the work of feeding.

9. As the laying of our queen is never restricted, her large population has the best chances to reach spring strong and healthy.

We desire to add, that none of the bee-keepers who oppose large hives have ever tried them, and act under the influence of preconceived ideas; while we speak with the authority that a long experience can give, and are backed by hundreds of European and American bee-keepers who have made the same comparisons that we did.

Hamilton, Ill., April, 1889.

CHAS. DADANT.

There, friends, we have a valuable article. Now, although it should not seem prudent for us all to adopt the large Quinby frame, I do think it behooves us to think well before we choose a smaller frame than the old standard Langstroth. I have for years been well satisfied that we could raise more bees with a frame larger than Langstroth's, for the reasons that Dadant has given; but when other things are taken into consideration, especially the matter of securing comb honey, and getting sections close to the heart of the brood-nest, I think I would use a frame a little shallower than would otherwise be needed; and then when we reflect that most of us have the Langstroth frame already, it seems to me very good policy to let well enough alone. By the way, one can not well avoid the conclusion that friend Dadant has some extra-prolific queens, especially those that lay 4000 eggs in 24 hours, and keep it up for weeks. I do not know where he gets his stock to raise queens from at present; but I am inclined to think that it was imported from Italy, not very long ago. Will he please tell us about it? I presume that it will, of course, be of no use to have such large hives unless we also have queens to match.

MOVING BEES DURING THE SWARMING SEASON.

ALSO SOMETHING ABOUT SETTING BEES ON DIFFERENT STANDS WHEN TAKEN FROM THE CELLAR.

ON page 165 friend Daniels speaks about moving bees in and out of cellars like so many potato-barrels "and not one word about losing bees in all the years I have been reading bee-papers." Why, friend D., unless I'm very much mistaken there has been a good deal said about it, and I think that the majority of bee-keepers insist that, when taken out of the cellar, each hive must be put on the stand it occupied before going into the cellar. Certainly I have no recollection of any case where bees were taken out for a fly, put back in the cellar again, and then, when taken out next time, no care taken to put them on the same stands.

In all cases it is entirely safe to put a colony back on its own stand. Sometimes, however, it is not convenient. Take my own case. In my cellars are now bees from four apiaries. Without much trouble I could put all that belong in the home apiary on their own stands. Even then if I had nothing but these, and if a goodly number should die in wintering, I believe I should rather have the survivors fill out the rows solid as far as they might go, rather than have vacancies. But those colonies which come from the out-apiaries can not be put back where they stood last fall without a great deal of trouble. You see, it is not easy to have regular places for them for the few days in fall and spring that they stand near the cellar. But after those bees have been in the cellar about five months they don't seem to pay any attention to their old location. I set them where it happens to suit best, without paying any regard to their previous location.

Before going any further I want to advise you, if you are a beginner, to set it down as a rule, that, if you don't want to lose bees, you must be careful not to change their location. You haven't a great many colonies as yet, and you can easily place them in spring where they stood the previous fall. Experiment somewhat gingerly to see what *your* bees will do with *your* management before you risk putting many on stands new to them.

Now I may go on to say that, in my own case, even if they do mix up some I don't know that it is any loss, although I should rather have each bee stay in its own hive. If I should move bees as does friend France (see page 81) I should rather expect trouble; still, I can readily believe that he gets along all right with it. But as to having a cluster cling to the old stand when put on a new stand in spring, *I never had a single case*. I can imagine that, if I had very few colonies, or only a single colony, and should give it a stand in the spring, a few rods from the old place, a large number of the bees *might* gather at the old stand and keep up such a commotion there as not to hear the hum of the bees at the hive, and so cling to the old stand. But if a large number of colonies were in easy hearing I have little fear but that the old stand would be speedily deserted, and the bees would go into hives most likely not their own; for on first being taken from the cellar, bees of different colonies seem to mix peaceably. Another thing: If, during the rush of the honey-flow, a colony with no others near it should be moved half a mile, or, indeed, any

distance within the scope of its previous flight, I should expect to see a cluster at the old stand. From the headlong way in which a bee rushes from the hive in a bee-line after a load of honey, one can easily believe that it pays little attention to its surroundings till it is some distance away. Now, suppose this bee should be taken to a new location two miles away. On going out to-morrow morning it strikes within a few rods upon a linden-tree upon which it had been at work the previous day. Even if this tree is two miles from its old home, it knows well the way back, and it doesn't know the way to its new location. Is it not the most natural thing for it to fly straight back to its old home? By the way, is not this some proof that bees in general do not fly so very far, for I think it is generally understood that bees moved in the harvest two miles from home, will never return? If that distance was within the range of their previous flight, would they not return?

Now, upon coming back to the old stand I should expect to see a large cluster remain there. But if another colony were within a very few feet, or a number of colonies within a very few rods, I should hardly expect to see a single bee remain for any length of time on the old stand. I have often removed a colony from its stand in the middle of the harvest, and I don't believe a colony thus moved ever lost a dozen bees, or, rather, that a dozen of such bees were ever *entirely* lost, for the whole field force will fail to find the hive when thus moved; but they will peaceably unite, when loaded with honey, with one of the nearest colonies.

On page 81 you say, friend Root, "When they are moved so far that they do not meet familiar objects on their first flight, of course they will all go back to the hive." Now, I am a little skeptical about that, unless some modifying words are used. How far will a bee in a strange place dart from its hive before it recognizes that there are no familiar objects? I wish that some one who can, would answer that question. I hardly think it awakens fully to the situation till it is at least a number of feet from the hive. When it does think about it, it doesn't know where to go; and if other hives are standing near, will it not be just as likely to go to one of them? There is likely to be an unusual commotion at the hive which has been moved, and this will probably prevent many from going wrong, but I have for a long time had some suspicion that when I moved bees to an out-apiary, there was more or less mixing up.

C. C. MILLER.

Marengo, Ill.

Friend M., I am well aware that bees do mix up a great deal from one hive to the other; and especially is this the case when they are first taken from the cellar. We can tell exactly how much they mix by having a part of our apiary Italians and the other part pure blacks. We shall then find black bees scattered among the Italians, and Italians scattered among the blacks. In regard to your point about moving, so that they do not meet familiar objects, the first colony of bees I ever owned was very carefully watched. I was down before the hive in the morning before a bee had gone out, and I have repeatedly watched bees from colonies that had been brought in the night before; that is, I would sit down by the hive and see how the inmates behaved when they

first discovered they were in a strange neighborhood. So far as I can recollect, they always took their points. I do not remember to have seen a bee under such circumstances go right off to the fields without noticing that the surroundings were different, and I have always supposed that the minute they discover they are in a strange neighborhood they take their bearings as bees do from a newly hived swarm. In purchasing bees from our neighbor Rice, about 10 miles away, I often watch them when the wire cloth is taken from the entrance. Under such circumstances they come out with a rush—a great lot of them, while others stand humming at the entrance, and, as a general thing, I think almost every bee very soon, and without going a great distance, goes back to the hive he came from. Pretty soon they sally out for another reconnoissance, and within a couple of hours some of them will return with pollen. Now, if neighbor Rice lived within half a mile I should expect these pollen-gatherers to go to their old home with their loads; but so far as I can recollect, where they are moved a mile there is not often much going back; a mile and a half, almost none of it; and when you come to two miles, I never saw a bee go back at all. When I brought the first Italians into Medina County I watched this matter very thoroughly. I do not believe that *our* bees often fly more than two miles. In the last issue, p. 308, J. F. Whitmore had something to say on the same subject.

FROM SAN DIEGO TO DEHESA.

A RIDE THROUGH THE COUNTRY.

FRIEND ROOT:—At 6 o'clock to-morrow morning you will take a seat in my buggy, behind my messenger horse John. We will journey to the east, for Dehesa is 25 miles away, among the mountains, 1200 ft. above sea-level. Now, I am to do most of the talking; first, because I am older; second, because I know more of the country than you do. There, we have left the city behind; and at a glance over our shoulder we can see a thousand little clouds of smoke, rising from so many chimneys, where the busy wives are preparing breakfast. Look just over those little clouds of smoke, and you see San Diego Bay. How peaceful and smooth it is! and when you open your eye a little wider you see Coronado, with its grand and imposing hotel (the largest in the world).

But here we are, three miles out of town, and what have we? Only a gravelly soil; low, gently sloping hills, covered with brush. Why is this land in this state of nature? Is it not good for any thing? Yes, nature has bestowed upon this soil all that is necessary to raise good grain, fruit, berries, vegetables, nuts, and flowers; in fact, every thing that goes to make a prosperous and happy home. Only one thing is lacking—*water*. Water is king in this country. But, wait! You shall see, as we go further on, the source whence all this land shall drink, whence all the dense population that shall build for themselves homes upon this self-same soil in this delightful climate, where old Jack Frost seldom if ever comes, and then only to nip the

tenderest flower or shrub. Go on, John; let's jog along and show Mr. Root, at "five miles away."

Here we are. This is not a bad-looking place on our right; fine house, fine barn, fine out-buildings, and it looks nestled snug in that little canyon; the henry—*that* looks a good deal like home, does it not? Look to the left, and you see the orange-orchard. Yes, the trees are small. You were not with me one short year ago when John and I traveled along here, much as we are doing now. Well, then there was not a blow struck, the brush was waving in the morning breeze, the jack rabbit sported on hillside and valley. You ask, "How comes this transformation in one short year?" I tell you, money and Water (put the capital for Water, for 'tis king). This man was more fortunate, perhaps, than all would be, for he struck a big flow at a reasonable depth; and with his 14-foot windmill he hoists it to his tank, thence to the thirsty earth about his ground and trees. But we must hurry on.

Now you see the small house on the left; that is the six-mile house, where Mr. Harbison used to have his first out-apiary, now sold out and gone, for the bees must go further back. You see but little change in the face of the country. The same undulating hills and valleys, the same sandy soil, and brush and jack rabbits, but no houses; no, none. Two miles more, and here is the eight-mile house where the greatest stock in trade is bad whisky. Let's hurry up, John, and get out of this locality, for we are coming into America. Every turn of the wheels brings us into a higher altitude; and now if you will put on your glasses, over that joint at the left you will see an oasis in this wilderness of brush and low hills and gravelly soil. Here is home again, with its comforts and two windmills. We are now 700 feet above San Diego Bay, and within a stone's throw of the first crossing of the Cuyamaca & Eastern R. R. This word "Cuyamaca" would be spelled and pronounced in English (Quemahka). This road, that is now building as fast as men and money can push it through, will be one more through line from the great East to the western shore; and the next time you visit San Diego you will be hurled along at 40 miles an hour over the very ground over which we now sit.

We have left the sage brush behind for a time, and this newly turned-up soil on our right tells of culture, thrift, progress, and the go-ahead spirit of the true *American*. Do you see that streak of newly turned-up soil? Look at its meandering course, over hill and valley, now to the right, now to the left, but still on and on to the sea. That is the path where lies hidden the great water-pipe from the San Diego flume (but you shall hear more of that when we get to it). The summit! here we are, 11 miles from the city, and 900 feet up. You see no more brush, but cultivated fields; and if you will hold your breath for a little while, John will let us down to the first crossing of the great flume and the second of the Cuyamaca. Here they are together. While we contemplate the beauty of this body of fresh mountain water, flowing so peacefully beneath us, we can not but admire the skill and energy of man that has hollowed out and cut this path through the mountain-side for the locomotive, for the wagon-road passes over them both at this point. But on a few rods, and we will put on the brake, while you feast your eyes upon the scene below. This is the El Cajon Valley. "Cajon" in

English would be spelled *Cahone*. Now what do you see? You have come 14 miles to this lovely valley. Spread out before you are thousands upon thousands of acres of fruit and vines—a real paradise—nothing fanciful about it, but real. Here you find a soil rich, deep, and productive—no hillsides here, no grade, no brush, nor jack rabbits. Beautiful, is it not? Does man live here? Yes, 'tis the hand of man that has turned this into real beauty. Get-up, John! Past all this semi-tropical beauty we will wend our way to the Southeast Pass, and toward more beauty, or old Sweetwater, now Dehesa. Do you look over my shoulder to the right, at that fine house and grounds, with its young orange-orchard, vineyard, and 200 acres of barley? Last March, when I rode along here as we are doing now, the house was not yet done; men were busy setting out trees and vines; four plows were turning up the virgin soil for the first time, all in 12 months. But, halt! here we are, beneath this great flume; 82 ft. above our heads flows 5000 miners' inches of water. This trestle, that extends on either side of us, is 1232 ft. long; and what a splendid structure it is, so solid, so strong! Now let's stop a moment and think what a stupendous work is this, and what does it mean to San Diego City and County. Fifty-five miles away, where the peaks of the Cuyamacas penetrate the clouds, there is where this water comes from. This enterprise cost over \$1,000,000, and this now is what I promised to tell you several hours ago, when we were passing over the thirsty land this side of the city. This is what is going to give that land to drink, to make it bud and blossom, and to make plenty and contented homes all over that now barren waste. On and on, for time presses, 1000 feet now above the sea, and here is Mr. Rose—not a bad house has he got either; and just done. Do you see those ricks of baled hay, the orchard, and vineyard, where 18 months ago not a blow was struck, and Uncle Sam was owner of the land? 'tis true, every word of it. Brace yourself, for John is letting us down the McFarland grade. Whoh there, now! let your eyes do their best. The eye can take it in, but the tongue can not express the scene below. It is the Sweetwater Valley. Look! in yonder distance you see the sweet water coming. It will not pass us. Turning to the right it passes on and down to the great Sweetwater Dam. Before you now is the valley, the land where the celebrated Dehesa raisin of California is raised. This, now, on the right, is Mr. Allen's and Mr. Weddle's, all in one field, you say. Yes, 400 acres in one vineyard, besides fruit. We must certainly hurry on; and while we pass farm after farm with their surroundings, think what will this country we have come over to-day be and look like ten years from now. Let the mind picture the condition then. Here we are at the mouth of Harbison Canyon; one mile up grade, and we are home.

A. W. OSBURN.

Dehesa, San Diego Co., Cal., Mar. 14, 1889.

Well, old friend, you have given the readers of GLEANINGS one of the best pictures of California that I have ever seen—that is, the best pen-picture. It gave me a feeling of pain all through, however, to think that I bungled my trip in such a way that I did not make the trip with *you* in reality. I saw a great deal of what you mention; and I kept saying again and again to myself, "What is to be the outcome of these won-

derful improvements in the next ten years—yes, or even five years?" My brother Jesse and I visited El Cajon, and went through one of the large raisin plantations. That wonderful flume and those gigantic trestles were to me an unceasing wonder. In fact, I did not know, until I viewed that trestle-work and the Sweetwater Dam, that the combined skill of the mechanics of the world could produce any thing so imposing and grand in the shape of mechanical architecture. The work is not only a miracle of strength, but it is to me a miracle of beauty; and the very idea of pouring pure bright limpid water into those desert wastes, and making the wilderness blossom as the rose, fills me and thrills me with enthusiasm. Now, if I had had that buggy-ride with you, before we had been together many hours I should probably have given you an exhortation, after my fashion, in the way of praising God, "from whom all blessings flow." May be you have done that thousands of times, and are doing it every day of your life. If you have not, then why shouldn't you commence now? The very sight of those mountains, especially with the railroads, the great flumes, and dams, contrasting and comparing man's work with God's, seems to me should make any human being feel that God's plans *include* man's, and that his design was in the very outset that there should be mutual love and harmony between God and man. God loves us, or he would not have taken all this pains; and it seems to me that the highest and holiest and noblest thing that man can do is to love God and look to him in thanksgiving and praise very often; and especially when beset by troubles, doubts, and uncertainties does it behoove him to "cling to the rock that is higher than I."

HUBER HIVES.

FOUL BROOD, ETC.

MR. WM. C. BROWN, Otago, New Zealand, sends me a frame by sample post which he describes. He wishes me to give my opinion of it in GLEANINGS. This is really a Huber frame, like the Quinby, Bingham, and new Heddon, only this is closed above and on the sides. The idea is, that there should be no space between the comb and side of the hive, nor any upward ventilation. Very likely a valuable end is gained in the use of such frames. We should judge so from the fact that they are used by such persons as Captain Hetherington, Bingham, etc. The only question is, Does the advantage gained cost too much? To close all openings above would necessitate exclusive side-storing. I do not believe such a system advisable. No one uses it in America, so far as I know. Indeed, I do not believe it very important. The bees seal the top of the hive very closely, and I can see no objection to a shallow space—bee-space—above the frames. In fact, I like it. I have used several hives of the Huber type—closed-end bars—and I believe, after all, that, for the general bee-keeper, the regular Langstroth hive is yet the best. The convenience is more than the slight advantage gained by omitting the end space between the

frame and hive. Indeed, I am not sure that, even in wintering, the old box hive is superior to the Langstroth, especially in wise hands.

Mr. Brown asks me if I think it wise to legislate on foul brood. He asks if the same money and effort put into research will not accomplish more. In reply, I will say that a somewhat similar malady attacks the peach-trees in Michigan. A law was passed requiring the immediate removal of diseased trees as soon as the malady was discovered. That law has saved thousands of dollars to Michigan peach-growers. It was enforced till people saw its value. Now no law is needed. Why would not or might not the same be true in case of foul brood? We have a law in Michigan, but have never had to use it more than once or twice, I think. The very fact of the law seems to have brought the required action without any legal proceedings. We understand the disease pretty well now. One of Michigan's best bee-keepers has had it for two or three years. He told me last summer that he did not fear it at all. He rather enjoyed dealing with it. This man, however, has a big brain, and he knows how to use it.

A. J. COOK.

Agricultural College, Mich.

Friend Cook, this matter of closed-end and closed-top frames, made in such a way as to give them the advantage of the old box hives, has been discussed for more than twenty years through our bee-journals, and I believe the general decision has been in accordance with the views you give. I think you are sound, also, on the matter of legislation in regard to such things as foul brood, the malady that threatens to ruin the peach-trees, and other like matters. It is not because people deliberately propose to harm their neighbors, but it is the ever-prevalent sin of neglect and procrastination. In California, by efficient measures in Ventura County, foul brood has been practically extinguished; but they were obliged to elect some one as inspector, and have him visit the apiaries, and decide what ought to be done. In no case that I heard of did any one dispute the justice of the law, or refuse to do as the inspector directed. But without the law, and the inspector to visit apiaries, make examinations, and decide or advise, if you choose to put it so, what is best to be done, nothing would be accomplished. The simple matter of letting people know that such a law has been passed, is often all that is needed to stir them up to a sense of duty.

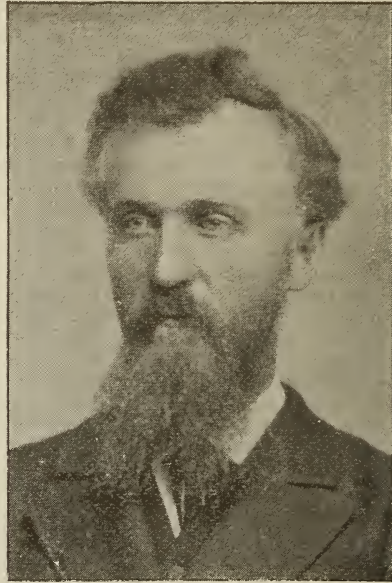
O. O. POPPLETON.

A SKETCH OF HIS LIFE, BY HIS SISTER-IN-LAW.

O. POPPLETON was born near Green Springs, Seneca Co., Ohio, June 8, 1843. When four years of age his parents removed to Napoleon, Henry Co., Ohio, where, two years later, his father died, leaving his mother a widow with two sons, in straitened circumstances. Two years later his mother married Mr. Joseph George, of Clyde, O., and settled in Sandusky Co. After living there a few years the great inducements of the West influenced his step-father to move to Northern Iowa, where they settled in Chickasaw Co., when Mr. Poppleton was 12 years of

age. This was his home until two years ago, when he removed to Florida on account of his health.

As Iowa was a very new country, Mr. Poppleton had the full benefit of pioneer backwoods life. His education was obtained in common schools, except about two years at Oberlin, where he also took a commercial course. When 16 and 17 years of age, in company with an uncle of his he taught writing-school at several places in Ohio—at Lithopolis, Homer, Washington C. H., and Springfield; at the latter place he also kept books for a short time in a daily-paper office.



O. O. POPPLETON.

In October, 1861, he enlisted as a private in the 7th Iowa Infantry, and re-enlisted as a veteran in 1863. In February, 1864, he was promoted to a lieutenantancy in the 11th U. S. C. Inf., and a few months later he was made regimental adjutant. It was while performing the duties of this office, and also at the same time those of post adjutant at Murfreesboro, Tenn., that overwork resulted in the eye trouble that has so seriously affected his health ever since, and which compelled the refusal of an excellent offer of employment at the time of mustering out. He served his country faithfully for five years; and though he received no scar upon his body, yet the smell of smoke was strong upon his garments. He was in several hard-fought battles, and taken prisoner once, but was held only a few weeks, when he was released or exchanged.

On leaving the service he settled down on a farm adjoining his parents' in Iowa. He married a Miss Groom, who died twelve years after, leaving him two daughters. Mrs. Poppleton was a confirmed invalid for nine years.

Dec. 6, 1881, he married Mrs. Mattie Herrick, of Ft. Wayne, Ind., who is a sister of the writer of this sketch. On account of poor health, and the very severe winters of Iowa, they went to Florida to spend the winter for several winters, where he found the change of climate, with outdoor living, greatly improved his health.

Mr. Poppleton is a great sportsman, and takes much pleasure in hunting and fishing; and as the climate in Florida is just suited to that kind of work, he enjoys living there, exceedingly. As his wife also has poor health, they spend much time camping out, which way of living seems to agree with them, and they feel much stronger and better than when living indoors. On their return home from the South they brought a great many curiosities, some specimens of the beautiful Southern birds, such as we do not see in the North.

When first married, his step-father gave him a colony of bees in a box hive. It so happened that, in the winter of 1869, an acquaintance stopped over night at his house, and among other papers he had with him was the bee-paper that was at that time published by H. A. King, at Nevada, Ohio, now the *Bee-Keepers' Magazine*. This he became very much interested in during the evening, and immediately afterward obtained all literature on bees he could find, and made a study of the "busy bee." He soon learned there was a better way of handling than in a box hive. He transferred the two colonies he then had into movable-comb hives; obtained other colonies, and in a year or so had quite an apiary, which, in common with so many other apiaries in the country, was almost destroyed by bad wintering. But the use of chaff hives removed this trouble for the future.

On account of having such poor health he made no effort to do a large business, but confined himself to a simple apiary varying from 75 to 150 colonies, spring count, and to the almost exclusive production of extracted honey. For the last ten years that he lived in Iowa, his annual crop of honey averaged 110 lbs. per colony. His half-brother, F. W. George, has had charge of his apiary since his removal to Florida.

Some fourteen or fifteen years ago he discovered the value of chaff as winter protection for bees, without knowing that any one else, notably Mr. J. H. Townly, of Michigan, had previously made the same discovery. He also invented the solar wax-extractor about the same time. He was vice-president for several years of the N. A. B. K. Society; president of the Iowa State B. K. S., and honorary member of the Michigan State B. K. S. Mr. Poppleton is a careful observer, doing his own thinking, and adhering to plans which he has found successful.

Mr. Poppleton is of spare figure, hardly up to medium size. His very pleasant manner is only a fair index of a genial and loving spirit that, in an unusual degree, strives to put the best construction on the conduct and motives of every one.

Bowling Green, Iowa.

MRS. M. GEORGE.

And so it transpires that friend Poppleton was first attracted to bees by H. A. King's publications, from Nevada, Ohio. I myself first got hold of Langstroth's book, but I very soon came to King's text-book and a circular in regard to the American hive. These two last aroused my enthusiasm to such a pitch that nothing would answer, short of a hurried trip to Nevada. I found friend King there, and got my first glimpse of a real bee-hive factory. Every bee-keeper who has heard friend Poppleton talk at our conventions must have been impressed with his very thorough and earnest study of every minute phase of our favorite industry.

Even when I read his writings I am astonished to see how closely and critically he has looked into every obscure point and corner; and his invariable success as a honey-producer attests to the excellence of his wisdom and judgment. We are greatly indebted to him for the solar wax-extractor, as well as for many other things. Perhaps it would be well to say, that, since the writer makes no mention of it, Mr. Poppleton is now in Cuba, taking charge of some 600 or 700 colonies for M. Dussaq, Apartado 278, Havana. Friend Poppleton's experience with bees not only covers the temperate climate, but Florida and the island of Cuba. You will notice that he is one of the respondents to our Question-Box, and he is eminently well fitted to impart almost any information in regard to bees.

THE JAPANESE BUCKWHEAT.

PROF. COOK ON THE CARDINAL FLOWER, ETC.

FRIEND ROOT:—Last spring I purchased of you four quarts of the Japanese buckwheat. I sowed the same on new ground. It ripened earlier than the common kind. The bees worked on it from morning to night, but they did the same on common buckwheat. This is an uncommon occurrence here. I think it was due to the moist, cloudy weather. The buckwheat filled well, but I saved only two bushels of seed. We had a week of warm, rainy weather immediately after it was cut, and it sprouted so badly that I saved less than half the seed. But what I saved is nice. I am convinced that it is ahead of the common kind.

THE CARDINAL FLOWER.

Prof. Cook's article on the cardinal flower interested me, as I am making a special study of bee-botany. I know friend Cook is unprejudiced and good-natured, and will not feel offended if I tell him that there are some things in his article (see p. 926, Dec. 1, 1888) that are not clear to me. Without doubt it is due to my ignorance, or else to my observation of the flower not having been thorough enough. The tube formed by the filaments and anthers is two or three times the length of a bee's tongue, and the nectar is secreted at the bottom of the tube by glands which are on the ovary near the base of the style. There is no opening into this tube except at the top, after the stigma has pushed its way up through the united anthers. Am I not right, friend Cook? Now, the point which puzzles me is as to how the bee gets the nectar. Then from the manner in which the bee must necessarily alight on the flower, I can not see that she would do much better work in fertilizing the flower than those upper flowers which shed their pollen, when the lower ones are most in need of it. To be sure, it would be chance work, but I can not see that it would be any more so than the work of the bee in that line. If I'm in error, please correct me. I admit frankly that I am not as well acquainted with the cardinal flower as I hope to be. The place neighbor Hilton spoke of is only ten or twelve miles from here, and I hope to visit there next season when the cardinal flower is in bloom. In this immediate vicinity it is rare, and grows only in low moist places.

Prof. Cook, you, an entomologist, tell us that the

honey-bees do not bite through the corolla tube of flowers to get the nectar. Very good! But on page 188 of the A B C (or 204 of the last edition) friend Root, a practical bee-keeper, tells us that they do bite through at least one flower, and speculates on the probable fate of the plant. Now, when learned men disagree, what are we common fellows going to do?

THE WILLOW HERB.

Last season I received most of my light honey from the great willow herb, which grows here profusely. It thrives best on high ground, especially where fire has run, hence the commonly known name of purple fireweed. Those who do not know the plant should not confound it with the fireweed which blooms just before the fall frosts. The willow herb is known by a great many names, such as Indian wickopee, deer pink, Indian pink, and purple fireweed. It grows from 4 to 7 feet tall, without branches, and blooms in July and August. There is a smaller variety, which grows on low wet ground, whose stem branches.

Fremont, Mich.

WILLIAM E. GOULD.

COMMENCING THE SEASON.

HOW TO PREPARE FOR THE HARVEST.

OUR first work after getting our bees out of winter quarters is to know that each colony has honey enough to last them from two to four weeks, the latter being preferable to the former. Unless bees have plenty of honey at this time of year, brood-rearing will go very slow, for bees are very frugal when they think there may be danger of starving in the near future; and as brood-rearing requires much honey, it will be seen why honey for four weeks ahead has an important bearing on the honey crop which we hope to obtain. The brood reared during this month and the latter part of last month, constitutes the working force which gathers honey from white clover, so if we are to get a crop from that source we must leave no stone unturned which looks toward that end. Looking toward this I go over all of my colonies some cool morning, and all which do not occupy six spaces between the combs, with bees, are shut on to as many combs as they have brood in, by means of a division-board, as soon as it is warm enough to work with them. If they are very small, so as to have brood in only one or two combs, and small patches at that, I take away all extra combs, so as to take precaution against robbing; but if they are a fair colony, I leave the extra combs the other side of the division-board, so the bees can carry the honey over as they need it for brood-rearing. Contract the entrance to each colony as soon as they have their first flight in the spring, to suit the size of the colony, giving the very strongest not more than three inches in length of the entrance, while the weakest should be contracted so as to let out but one bee at a time. If, after all precautions, the bees get to robbing, I know of no better way than to carry the colony, that does not protect its stores, into the cellar, and leave it a week or so, or until the bees are getting pollen freely, when they will rarely ever attack them again unless they are so weak as to be worthless. Having all of my bees fixed as above suggested—that is, they all have

honey enough, and those occupying less than seven spaces between the combs shut on to only as many combs as contain brood, our next work is to increase this brood as fast as possible. There is little if any thing gained now by handling the bees, only to supply them with honey, should any be short; but as soon as it comes fairly settled warm weather, I think a gain can be made by spreading the brood to more than pay for the labor required. When such weather comes, the way I work with the strongest colonies, those not having any division-boards, is to change the brood-nest right over; that is, to place the central sheets of brood, or those having the most brood in them, in place of the outside ones, or those having the least brood in, placing those having the least brood in the center. Thus we get every frame full of brood that has any brood in it at all. Frequently we will find all of the brood in one end of the combs, the other end of the frame having none in at all. When such is the case I simply change ends with every alternate frame, which brings about the same result as before. The next time over, or in about a week more, I take one frame from the outside of the brood and place it in the center, and so on till all of the nine frames are filled with brood. Those that are contracted with the division-boards are kept as they are until they have every available cell for brood filled with the same, when an empty comb is placed in their brood-nest also.

If I wish to build all up to strong colonies, I take from those having their hives full of brood a frame of hatching bees, and give it to the strongest of the weaker colonies, and place an empty comb in place of the frame of hatching brood taken, and so on till all are built up to strong colonies, each having a hive full of brood; that means, have the brood so it comes out to the side-bars of the frames; even the cells bordering on the bars at both sides and top should have brood in them, and do not stop short of this. If you have queens that will not keep the hives filled with brood like this during the month of June, mark them, and as soon as convenient replace them with those that will. If you do not wish as many colonies of bees as possible, I will tell you of a plan of using those colonies that needed a division-board, which has been very profitable with me in the past.

As soon as those having five frames have them filled with brood, take from them a frame of hatching brood and give to the next strongest, say one that has four frames, and put an empty comb in the place it came from, and so keep working till you have each hive contain five frames completely crowded with brood. A queen that will not keep five Gallup frames, or their equivalent, crowded with brood is not worth keeping at all, and should be superseded at once. If you succeed as you should, all will have their five frames full about the 10th or 12th of June, in this locality. Now go to No. 1 and open it, and look the frames over till you find the queen; and when you have found her, set the frame she is on to one side, then take the four remaining frames and all the bees to No. 2. Spread the five frames in No. 2 apart, so as to set the four frames brought from No. 1 in each alternate space, made by spreading the frames in No. 2. Close up No. 2 now, and you will see that, in ten or fifteen days, it will be one of the strongest colonies you have in the yard. Returning to No. 1, which we left with the queen standing outside of the hive, we

place the frame in the hive close to one side; and after putting in an empty frame next to it, the division-board is adjusted, when we have a nice nucleus, to be used for any purpose we may desire. I generally use it for building worker comb or for rearing queens according to my needs, and think for either it can be made of more profit than to take away the queen and unite all of the bees with No. 2, as some who have written me conclude is a better way.

I have given the latter part of this article before; but of late I have had to answer so many questions regarding it, that I thought it best to give it again. I hardly think it advisable to put on boxes, in this locality, in May; but further south they should be put on as soon as any of the hives are filled with brood. Of course, each one can use the principle described, whether north or south, and vary the dates to suit their locality. The plan as above given is the best way to get the bees ready for the harvest, in my opinion, after having tried multitudes of other plans, none of which proved as good.

G. M. DOOLITTLE.

Borodino, N. Y., Apr. 13, 1889.

SHALL WE PAINT OUR HIVES?

NOTES ON DOOLITTLE'S ARTICLE, PAGE 217.

UNTIL I read Mr. Doolittle's article on page 217 I had never, I think, heard it claimed that unpainted hives had any advantage over painted ones. His experiment with a number of colonies in which those in the former style of hive came out so much better than in the latter is experience, and can hardly be gainsaid. I have always claimed that the testimony of experience is worth entire volumes of reasoning. But, did he have chaff cushions, or any kind of a good absorbent over the frames? I feel certain that, when that part of the matter is properly managed, all trouble as to moisture will disappear. When I prepare my bees for winter I put about two thicknesses of burlap over the frames, and above them about four to six inches of chaff. The chaff is in boxes, the sides of which are made of boards with a burlap sheet tacked on to the bottom, and the top left open. These chaff boxes rest upon the brood-chamber in such a way as to more than completely cover the frames, so that I think no heat is ever lost. For experiment I have sometimes put on enameled cloth in place of the burlap, in which case I have found them dripping with water, and the combs moldy. But when I use the absorbents, as described above, I have no such thing. I often find the ends of the sheets and chaff wet; but immediately over the cluster, all is dry. It is very little condensed vapor I ever find, and that in the remotest end of the hive. I leave the winter packing above the frames on until the weather is warm and the stocks are quite strong. I think my upper absorbents are about as near perfection, so far as they go, as can be obtained, and obviate all difficulty concerning moisture. That done, I think it not hard to establish the superiority of painted hives. I admit I have not tried unpainted hives very much. I had one when I commenced bee-keeping, and it, though not an old one, was all warped and cracked, just like any other unpainted box when exposed to the sun and weather. Judging from that, and the characteristics of pine lumber in

general, I considered the matter settled, and went to painting my new hives all white. In behalf of paint, the point of perfection must be added to that of durability. But those are not the most important items in the case, after all, I think. White does not absorb heat. It is as a shield from the piercing rays of the summer sun that I want my hives painted white, as many of my hives stand right in the sun. Some bee-keepers, A. I. Root, for one, have given us proofs that, when hives are painted white, the interior is less affected by the heat of the sun than those painted any other hue; and the difference between white and unpainted hives must be the same in kind if not in degree.

One other point: If porous walls allow moisture to pass out, must they not allow it to pass in likewise? I know that the interior of my painted hives is much affected by the dryness or dampness of the weather, while those in the sun are perceptibly dryer than those in the shade. Must not the unpainted (and consequently porous) hives be even more sensibly affected? If I am wrong, I am willing to be set right; but so far, I am satisfied that it is better to adhere to painted hives.

GEO. F. ROBBINS.

Mechanicsburg, Ill., Mar. 22, 1889.

Very likely, friend R., unpainted hives, during a very wet, rainy time, would get more damp and soggy than painted ones; but when the sun comes out I think they will dry out, outside and inside, quicker. In the early spring, when the bees need all the benefit they can get from the sun, a black, unpainted hive would certainly secure more warmth; but when the great heat of the summer sun becomes an objection, it would be just the other way. A careful, enlightened, intelligent bee-keeper will, as a rule, have not only his bee-hives, but his implements and every thing else, including house and barn, kept well painted, while the slipshod don't-care old fogey would be pretty sure to have every thing unpainted; therefore paint indicates the character of the man. I should hesitate some about wanting my hives to present such an appearance as unpainted ones usually do.

WOODEN COMB.

PROF. COOK TELLS US THAT IT IS ALREADY IN PRACTICAL USE.

MR. EDITOR:—You, the publisher of a standard work on potato culture, and most readers of GLEANINGS, will, at the mention of Aspinwall, think of potato-planters. The Aspinwall potato-planter is the invention of Mr. Aspinwall, of Three Rivers, Mich. Mr. A. is not only an inventor of high rank, but he is a refined Christian gentleman, as every one who meets him will at once believe upon looking into his face. How much there is in a face! It is indeed the mirror of the soul. I think, friend Root, you and I once talked this over. In Tennyson's "Elaine," Launcelot, when first seen by the beautiful Elaine, is thus described:

The great and guilty love he bare the queen,
In battle with the love he bare his lord,
Had marred his face, and marked it ere his time.

It seems as if nature had made it so for our protection. The evil heart is very often betrayed by the face. So a clean, pure face as surely indicates

a refined and manly heart. I felt drawn to Mr. Aspinwall when I first met him, just as you and I did to our friend Mr. Cowan. I always feel richer when I become acquainted with such people. Mr. Aspinwall is also a practical bee-keeper, and this is why I am writing of him. He uses a modified Quinby hive, and believes in it. Indeed, he knew Mr. Quinby well, and, like all who knew this excellent man, he can not speak in too high terms of him.

Mr. Aspinwall has invented, and put into practical operation, wooden combs. These are simply boards with round holes the size of brood-cells, cut from opposite sides to the center. Mr. Aspinwall has tried these, and says they are accepted by the bees both for storing and breeding. He puts these in hot wax to soak, so they are covered with a very thin coating of beeswax. He is going to send me a hive fully stocked with these wooden combs, to try. He is sure I will like it. As the partitions between the cells are thick, the combs have to be larger or more numerous in the hives than are natural combs.

THE ADVANTAGES.

Mr. Aspinwall claims that these are superior, as they are strong, durable, inexpensive, perfectly under our control, warm, and so better for winter. As the size and depth are under our control, we can make the combs worker, drone, or store combs, at pleasure; and as the bees can not cut the cells down, they must accept what we give them. Mr. A. says that the queen can not lay in deep cells, thus we can have cells of worker size, and yet they will be only store combs. If combs are $\frac{3}{8}$ of an inch apart, then queen-cells can be made on the edges only, and can be easily seen or found, as the bees can not gnaw the comb away. Mr. Aspinwall has secured a patent on this, which is surely his right. If of no value, then we need not use it; if of value, then we ought to pay him, as it is his invention; and without his thought and work we should have known nothing of it.

I am principally interested in this wooden comb, as I see in it a chance for some very interesting and I think valuable experiments. For instance, our friend Mr. S. Corneil thinks that bees can not live on the carbo-hydrates alone. I believe Schonfeld holds the same opinion, and argues that the nitrogenous material may come from the larval excreta and exuvia which collects in the cells in breeding. From my experiments with very new clean comb I have been led to the opposite opinion. With these wooden combs we can demonstrate the truth or falsity of the position held by the above-mentioned gentlemen. We can use wooden combs in which no brood has ever developed, and combs filled in the upper story above the brood-nest, where no pollen would be stored. Thus we shall have a clincher. Now, I feel perfectly certain that bees thus wintered will not only live but thrive. I think this is in unison with physiological laws. True, all animals need nitrogenous food. But in winter bees are so quiet, and the functional activity so slight, that the small amount of albuminoids needed is in the blood. So with the almost pure carbonaceous food—honey, or, better, pure sugar syrup—they are strong and healthy. Of course, these combs will be very heavy. They may not be practical or satisfactory, but I shall be glad to try them for the sake of experiment and curiosity, if for nothing more.

Agricultural College, Mich.

A. J. Cook.

We are very glad indeed, friend Cook, to

know that Mr. Aspinwall, of whom we have all heard more or less, is a bee-keeper as well as an inventor. I heartily agree with your remarks in regard to our faces being an index to our character; therefore if a man's face is not a good one it is, at least to a large extent, his own fault. I will try to keep it in mind next time, when I feel inclined to scowl and look cross.—If I am correct, father Langstroth has the credit of being the first one to suggest using combs made by boring holes of the desired size and depth close together, in a board. I have been too busy to look it up, but I think that in one of the earlier volumes of GLEANINGS the suggestions were put in print. Such combs have been tried by different ones, if I am not mistaken; but the decision was that they were too heavy; and without exceedingly expensive machinery it would be impossible to get as many bees to the square inch as nature does. More than ten years ago, myself and Mr. Washburn discussed how a machine would have to be made in order to make these perforated boards so rapidly they could be sold at a price within the compass of the average bee-keeper's pocket-book. We have combs with a wooden base now in our apiary; the base was embossed by running it through a foundation-mill. One objection to it was, that it took so much beeswax to soak up the wood.

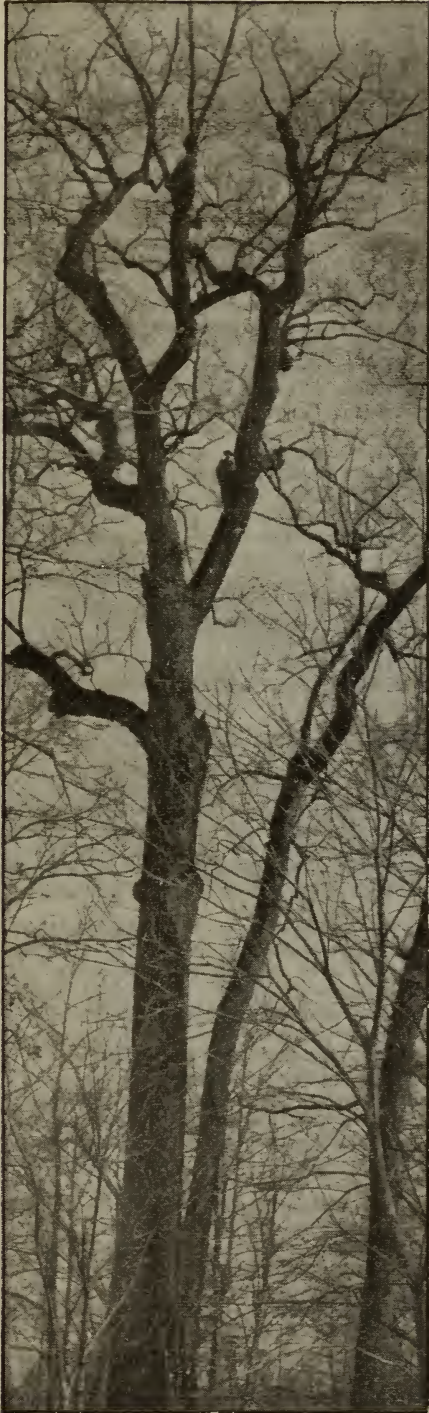
BEE-HUNTING.

HOW TO CLIMB THE MONARCHS OF THE FOREST.

MR. ROOT:—By to-day's mail I send you a photograph of a large poplar-tree, which I climbed recently by means of spikes and staples. To prevent the possibility of falling I put a belt under my arms. To this I attached two chains. At the end of each chain is a snap. My method of climbing is as follows: After ascending the ladder as far as I can go I drive into the side of the tree a large bridge spike, far enough into the wood to hold my weight. A little further up I drive another spike. In between the spikes I drive the first staple, and to this I attach the first chain by means of the snap, and ascend by the nails as far as the chain will allow me; I then drive another staple, and attach the other chain, and next loosen the lower snap. After driving in more spikes, I again ascend as high as the chain will allow me, and attach the other chain to another staple. In this manner I can make my ascent with perfect security.

The tree shown in the picture is 7 feet in diameter at the foot. If you will follow all along up the body of the tree, just above the crotch on the right limb you will see your humble servant, 88 feet from the ground. The tree stands close to the Black River, in a graveyard, and from it I obtained 50 lbs. of honey. Your climbers are excellent for small trees, say from two to three feet in diameter; but the tree illustrated has such a rough and uneven bark, and is so large, that it would be difficult to climb it without the aid of spikes and the staples I have mentioned. On account of the large knots it would be impossible to use a rope, or something similar, to hitch up by climbers, as described in the

A B C book. Knots are not in my way when I use spikes and staples.



DERRINGTON'S DEVICE FOR CLIMBING VERY LARGE BEE-TREES.

Next summer or fall I am going to climb what is called the "Big Bee-tree" that stands on the bank of the St. Francis River, down in the sunk lands. This tree has 15 swarms in it. It is a cypress, 14 feet in diameter at the foot. The bees work in at the body in a stream as large as a man's limb. I shall burn brimstone in the tree, and so kill the bees, as they are very bad. I have bees at home, and do not care to save any of these.

GREEN DERRINGTON.

Poplar Bluff, Butler Co., Mo.

Well, friend D., you have gone and done it, and no mistake. If anybody thought you were spinning a big yarn when you talked about taking bees from a tree 88 feet from the ground, they would give in when they came to look at your picture, for the picture, without question, is a genuine photograph of an awful big tree, with a man perched away up amid its limbs. With a harness such as you describe, and myself securely hooked fast, and held there by stout chains, I do not know but I might consent to climb such a tree; for one could not very well fall, even if he tried to, as you describe it. It seems to me, however, it would take a good deal of work and quite a little time to get up that distance. Ernest suggests that the load of spikes you are obliged to carry along might pull down pretty heavily, especially on the start. Did the 50 pounds of honey pay for the time and money invested? Never mind, even if it didn't. You "got there" and captured the bees, any way.

ORANGE-BLOSSOMS.

DO THEY PRODUCE HONEY?

HAVING followed, with deep interest, the account of your interesting trip to California, in which a great many things bring to my mind what I see here every day, I should like to say something about our orange-blossoms in Florida.

It is no surprise to me that, in California, orange-blossoms give no honey, the land being so dry that it has to be irrigated, and what little sweet there might be on the flowers is carried off by the dry atmosphere. In our State, and especially where orange-groves are situated, there is a continuous drainage of water, at a depth of two to five feet, under the very roots, from lake to lake, all the lakes being on different levels, and from these to rivers. The lakes are very numerous all over. From my house, on the veranda I can count and see four lakes, one of them two miles long. Our orange-trees being thus irrigated by the most wonderful system of natural drainage, are fully supplied with the water needed, and keep their blossoms so moist with sweet nectar that there is actually a small drop of honey in every bloom, which is eagerly sought by the bees. The atmosphere, owing to our proximity to seas and lakes, is always moist, and thus prevents a too rapid evaporation of the sweets on our blossoms. The yield seems to be continuous from morn till eve, since Feb. 15th. I have seen orange-trees, while blossoming, so covered with bees that one might easily have thought there were not one, but half a dozen swarms on one single tree. Our bees swarm during the yield of orange-honey, or, if increase is not desired, they can be worked

for producing what I call, after having eaten honey all over, the whitest, as well as the finest-flavored honey in the world. J. B. LAMONTAGNE.

Orlando, Florida.

What you tell us is surprising. Notwithstanding all that has been said in regard to Florida and the orange-orchards, I never before heard anybody speak of seeing bees in the orange-trees so that they made a noise any thing as they do in our apple-trees. Is it not only during an occasional favorable season that you have reports like the one above? One other thing: We have had two samples of orange-blossom honey from Florida this spring; and the last sample of comb honey is certainly equal to the California white sage, or to any thing else that it has been my good fortune to taste, in the way of honey. One of the friends sent us a sample that was passed around among the printers, and, if I am correct, they agree exactly with me.

HEADS OF GRAIN

FROM DIFFERENT FIELDS.

PROPER DISTANCE IN SPACING COLONIES.

WHAT distance must separate two stocks of different blood to keep them pure? If I should remove the queen from a colony, and after a few days should be compelled to return the same one, is there any liability that the bees would be hostile to her? Will feeding meal from a single vessel start robbing among the bees? Will setting hives that are all exactly alike, in a straight row six feet apart, be in any way a disadvantage to the bees? Which is the best way to arrange an apiary of less than fifty hives?

Muskegon, Mich.

E. HILE.

Queens are apt to go beyond the immediate neighborhood of their own hives to be fertilized. To keep the two races distinct they should not be nearer than a mile and a half. Two miles would be better. Feeding meal will never cause robbing. It is not exactly advisable to put hives in straight rows, with the entrances all one way. It is apt to result in some confusion to the bees, and particularly so to young queens. Hives as arranged in the A B C book make a very good arrangement. See "Apiary," in the A B C book.

LOSS OF QUEENS IN WINTER; LOSS OF COLONY; WHICH MAKE THE BETTER WORKING COLONIES, THE LARGE OR SMALL CONSUMERS WHILE IN WINTER QUARTERS?

I have to chronicle the loss of all late fall-raised queens. They hatched out the first week of October, and had ample chance of being fertilized. They were produced in an easy, off-hand sort of way, and they died after the same fashion. I knew they were gone in January, but I had hopes that their bees might live till I could re-queen them. All such colonies died early in March. I do not wish to say that queenless stocks will not winter, but I am certain that, had those queens lived and been mated, I should not have lost one stock. Had all my queens died in winter, all my bees would have been dead now. All had dysentery alike, and all such died. But my vigorous queens began laying in December,

and brood-rearing, less or more, was kept up; and by the time all the old sickly bees were dead I had a nice little batch of young healthy bees in each stock when March came. Phenomenal weather—did you ever know the like? Natural pollen the 15th of March, and brood in from one to three frames each. What will be the outcome of all this? My sickly bees consumed enormous quantities of honey.

I am surprised at some of the answers to Question 111. Yet one thing is only fair to these gentlemen; and when I reflect that their homes are scattered throughout the States I am disposed to be charitable. I am no bee-keeper in a scientific sense, but I know enough to know that here in Logan Co. (Central Illinois), the less stores an average colony consumes during a four-months' repose, the healthier will such bees be in spring. Of course, all agree that, after natural pollen begins to come in, the more they consume the better. My bees ate fully 30 pounds each stock this winter, and I shall have to feed; yet my report shows that they gorged themselves to death. I bought, last fall, 4 miles from here, a stock of black bees in a box hive. It was a large hive, and would weigh, in November, between 80 and 100 lbs. I went for it the last of February. I was delighted. The stock was just perceptibly lighter, packed full of bees, and actually not half a pint on the bottom stand. I looked narrowly all around the hive, but no dead bees anywhere. I say this is perfect wintering.

Beason, Ill.

JAMES HAMILTON.

Friend H., it seems to me you are a little hasty in your conclusions. I do not know that I would advise trying to winter a colony that raised a queen which failed to be fertilized. You see, in such a case they were some time queenless before winter commenced. The circumstances are quite different from that of a colony where a good queen was taken out and sold, say in November. In the latter case I do not think there would be a bit more danger of dysentery than if the queen were left with them. In fact, several observations seem to indicate that such queenless colonies are less liable to dysentery or spring dwindling.

DRONES FOR EARLY QUEEN-REARING.

We have seen mention made of securing drones early, so as to commence queen-rearing earlier. Bro. Doolittle can secure the drones early, but not the queens, so he sends south for virgin queens. We can get queens before we can get the drones in this climate, so we send south for drones. We had very fine weather the last two weeks in April, and can commence for queen-rearing to have them hatching by the 10th of May. We should have to have drone eggs laid by the first of April, to have drones to be of any service by the 15th of May. This is impossible with us here. We have for the past two years made arrangements with Mr. P. L. Viallon to furnish us by the 20th of April with a four-frame nucleus made up of two frames of drone brood, nearly ready to hatch; by this means we have them in time. By getting drones from a reliable person who will take pains to have them raised from the best stock, we also get new blood in the apiary, as well as early drones. We prefer to get them in the brood state, but have not heard any one so express themselves. Probably this is original with us. In the March number of the *Queen Breeders' Journal*, advice is given to purchase drones

by the pound, saying that they would likely be worth \$3.00 per lb. Getting drones by the pound would be a handsome job for both parties, the sender to catch them and the receiver to save them from being killed, as that many drones turned in on a colony would not be agreeable. Our way of managing a nucleus received with drones is to make the nucleus queenless when putting them in a new hive, and give them a frame of hatching worker brood. They can be kept queenless quite a while by giving young brood at times until plenty of drones are hatching from other colonies in their season.

JNO. NEBEL & SON.

High Hill, Mo., March 28, 1889.

THE ENTRANCE TO THE SIMPLICITY.

I should like to ask if there is no need of an alighting-board; and does not drawing the hive forward on the bottom-board make too long an opening, giving better chance for robbers, etc.? Please tell me how you space the frames in the hive. Is it not troublesome to change them about till they are just right?

E. CALVERT.

Nashville, Tenn., Apr. 1, 1889.

When robbers are troublesome we would use an alighting-board, as described in our price list and in the A B C. With an alighting-board you have the entrance more perfectly under control than in any other way I know of. For strong colonies no alighting-board may be needed. We space the frames in the Simplicity hives, simply by placing the end of the fingers between the supports at the ends; and one who is in the habit of doing it will do it without thinking of what he is doing, and almost as rapidly as his fingers can touch them.

A WASP'S NEST; DO THE YOUNG LARVÆ CAP THEIR OWN CELLS?

Last summer there was a wasp's nest in my shop. I knocked it down and laid it away, and the larvæ capped themselves over. I uncapped them, and in two or three days they were capped again. I uncapped them four or five times, and they replaced the capping. But each time the capping was thinner and whiter. You will say that the old wasps did it, but they didn't, for I shut the nest up in my shop, and worked there every day. Will the larvæ of the honey-bee do the same?

E. J. SHAY.

Thornton, W. Va., Apr. 8, 1889.

Will Prof. Cook please answer?

BEES AND SORGHUM SYRUP.

In GLEANINGS for April 1 were some comments upon feeding sorghum to bees, in lieu of honey, as a support until the honey-flow should come in. I can not conceive how any bee-man could successfully do this, unless in connection with other food; bees will cluster around an empty sorghum-barrel in which the staves have absorbed all the moisture, and draw from the saturated wood, or will sip of the *fresh* cane juice before any fermentation has begun; but sorghum molasses they will pass by in disdain, as it were. Last fall was very dry, and honey very scarce. The mill was visited a little by the bees. The fall of 1887 the season was extremely dry, honey crop short, the crusher was thronged, and thousands of bees were killed. Water was so scarce that it was sold by the barrel. We made a trip of four miles for all we used. Some hauled it ten miles, in tanks holding four or five barrels. The bees

were *compelled* to drink the juice, yet they did not disturb the new molasses. In my evaporating-room the juice tank and buckets would be covered, the interior part of the building was like the center of a moving swarm, and yet they did not disturb the condensed sweet.

You are aware that there is an acid principle in sorghum that is quite plainly discernible to the taste, and I think this is not relished by the bees; and from the fact that I've been handling both bees and sorghum for quite a number of years, and the two not 200 feet apart, I am assured that bees would come out in worse shape than Dr. Tanner in his 40-days' fast, if any one should attempt feeding entirely upon it.

W. N. ROOT.

Assumption, Ill, April 10, 1889.

While all you say is true, I have known bees to take with avidity a very good article of sorghum syrup, and syrup made of a pretty good article of brown sorghum sugar is taken by the bees just as well as any brown sugar, for all I can see. Of course, they will not use it when they can get better. Enough sorghum molasses has been fed, however, to make it pretty clear that it does not answer at all for winter stores.

HOW WE CURED FOUL BROOD.

You have not as yet (at least I have not seen it) published the method by which you cured, or exterminated foul brood from your apiary. Will you please tell me how it was done? We have the disease here, and I want to exterminate it this spring. I have the A B C plan, Cheshire's, McLain's, and Kohnke's methods. Is there any other? Send me Jones' cure and your own, please.

H. SMITH.

Ionia, Mich., Feb. 25, 1889.

The method by which we cured foul brood is the one given in the A B C book. If you have either the edition of 1887 or 1888 you will find it under the head of Foul Brood. The editions before 1887 do not contain the plan: not having had any experience prior to that time, we simply gave two or three methods of curing foul brood which were *said* to be reliable. The only plan which we could make work successfully is the one preferred by D. A. Jones, so that the method which we used differs in no important particular from that of Mr. Jones.

TO CONTROL INCREASE.

Would you advise controlling increase of bees, in the following manner, taken from an article by quite an experienced bee-keeper?

"Suppose colony No. 1 to send out a swarm. I move hive No. 1 back from its old stand about 3 ft., and place an empty hive, filled with combs, where No. 1 formerly stood. I have the new colony in the empty hive, filled with combs, where No. 1 stood. Then shake all the bees from frames of No. 1 into the new swarm. I shake the new bees, that hatch from No. 1, into the new swarm every day, until another colony sends out a new swarm, when I use hive No. 1 for an empty hive to receive the second new swarm, and treat No. 2 the same as No. 1.

Ellsworth, O., March 26, 1889. L. B. B. BINGHAM.

The plan you give is one that has been often recommended through the journals, and answers very well, only I should not want to shake the bees off those combs every day, as you suggest, for there would

then be none to take care of the brood, to keep it from chilling and starving, until the second new swarm came out. If you are sure of having swarms every day, it might answer; but otherwise you would lose all the sealed brood left when colony No. 1 swarmed. When a natural swarm comes off, there are always bees enough left in the hive to take care of the brood. I think that these bees had better be left there. Where one has more bees than he wants, however, and does not care if the brood does die, this might answer, to get as much honey as possible, regardless of loss of bees.

THE SHRUB THAT BLOSSOMS THROUGH THE SNOW.

You inquire about forsythia. It is a cultivated shrub that is referred to, I think, and it has been known for at least 20 years to be a pollen-plant in this State. It will be in bloom from April 1st to May 1st, according to season. It is good; it looks well with its load of rich yellow flowers on the bare green twigs, and before any other shrub blooms. Bees work on it well. Its abundant bloom is fine too. I can send you a bundle of cuttings if you want them. It is as handsome a shrub as a Japan quince.

H. L. JEFFREY.

New Milford, Conn., March 22, 1889.

Thank you, friend J.; but it now transpires that we have the forsythia in our own dooryard. We never knew it to blossom, however, when the snow was on the ground. Its yellow flowers usually come out the last of April or first of May. We should not have recognized it, perhaps, had not one of our subscribers sent us some twigs by mail, directing us to put them in a tumbler of water, saying they would soon blossom, which they did, and I at once recognized it. It does not seem to do well, however, very much further north than we are. See the following:

FORSYTHIA VIRIDISSIMA.

Over thirty years since, in a bale from Ellwanger & Barry, of Rochester, N. Y., was one of the above-named shrubs. It blossomed the next spring; that is, a small part of it. In three or four years it was increased to several, and each one would have a little branch or two blossom every spring, just enough so that one could imagine what a beauty one would be in full bloom. I tried "protection" and cellar "wintering" on them, but with no better success; and after eight or ten years I became disgusted, dug them up, and consigned them to the flames. From 15 to 30° below zero was too much for them. I kept bees, but never saw one on the blossoms. The shrub is probably kept in most nurseries.

JAS. H. ANDRUS.

Almont, Mich.

THAT FINE QUALITY OF CALIFORNIA HONEY; MORE ABOUT IT.

Friend Root:—In company with the rest of the unvisited Californians, I was somewhat disappointed in not seeing you while you were in the land of booms. I had saved out about a ton of the X quality of comb, of which I sent you a sample case last fall. In acknowledging the receipt of the case you spoke of the honey as the finest, both in taste and color, that you had ever seen, and said that you would give "considerable" to know what feed would produce such honey. Well, it was gathered from alfalfa blooms, pure and simple, all three

grades, the darkest during cooler nights, the lightest during the warmest nights and hottest days (110° in the shade). Remember, too, that this beautiful white honey was produced in the San Joaquin (waw-keen) Valley, and not in the mountains, and that I have taken the first premium whenever I have exhibited in competition with the "white sage" and other grades of California honey. Did you find any thing superior to it, while on your pleasure-trip?

I hope that both yourself and Mrs. Root will find time to visit us when you come to the State again.

LOUIS W. BURR.

Bakersfield, Cal., March 18, 1889.

Friend B., we have never seen any nicer honey to look at, and, I think I may add, finer to the taste, than the samples you sent us; and I am very glad indeed to know that it came from alfalfa and nothing else. But, strange to tell, when I inquired of beemen in California, near the great alfalfa fields, I do not remember one of them who told me they got any honey at all from it. They seemed to treat the whole thing as a sort of myth. Our older readers will remember that the alfalfa that we tested here on our honey-farm did not yield enough honey so that a bee was ever seen on it. This matter is interesting, as quite a few bee-keepers have been talking of sowing alfalfa, mainly because it is a honey-plant. Now, will you tell us something about it in your locality? Does it yield honey every year? and is it possible or probable that it will amount to any thing for honey when small patches are sown, the same way we sow buckwheat for bees, for instance?

NOT IN FAVOR OF QUEEN-EXCLUDING HONEY-BOARDS.

When I received your price list yesterday I looked through it as soon as possible to see what you had that was new and useful; but when I came to the zinc honey-boards I stopped to consider (as Eli Perkins used to say). Well, I have had considerable experience with those things—about ten of them. I can't call them honey-boards or queen-excluders, or any thing very good. They were on the common L. hives, and every brood-nest was above the queen-excluder, and all were very weak—much weaker than other hives in the same apiary. One of the excluders was so full of dead drones that a common bee could scarcely get through it. The poor fellows were all hung by their necks; and when I lifted the zinc up it looked more like a large brush than a honey-board. A man ought to be taken up for cruelty to animals who would use such a thing. I use the Heddon slatted honey-board. Friend Wilkin says he don't believe you dare publish this; but I don't care; that is just what I think of zinc honey-boards.

L. E. MERCER.

San Buena Ventura, Cal., Mar. 15, 1889.

Friend M., you tell our friend Wilkin that he must scrape up a little more charity. We not only *dare*, but we *want* facts, both for and against every thing we advertise and sell. In all that has been said for and against the perforated zinc, we do not remember to have received a report like yours. In the Alley drone-trap we have seen a few drones caught in the manner you describe; but we concluded that the poor fellows had worried so long to get through that they died in the attempt, hang-

ing, as you say, by their necks; but we can not understand why the brood-nest should be above the honey-board. The new perforated zinc which we send out will exclude queens. Some of the zinc which we sent out two or three years ago was a little defective, some of the dies having been flaked; but this we remedied by making new dies and building a new machine. It is possible that you have some of this old zinc; but we venture to say that you would have no trouble with our new zinc. If, in your next order, you will refer to this page in GLEANINGS, we will send you ten new zinc queen-excluding honey-boards, wood-bound. We shall be pleased then to have you report to us after trying it. Please remember that there are a great many good bee-keepers—some quite extensive ones too—who use and advocate perforated zinc.

LARGE OR SMALL BROOD-CHAMBERS.

I will crack Mr. S. A. Shuck's nut, in GLEANINGS of April 1, page 259. Your frames were too shallow for their length. A natural, good-sized brood-nest, embraces a sphere of about 10 inches in diameter; so if your frames were 10 x 10 or 11 x 11, you would have had better success. I have used 10 x 10 frames for several years, and like them very well; but for a more northern latitude I think they would be rather small, and think 11 x 11 the better size, or, say, the Gallup size, 11¼ x 11¼, as that is already largely in use, I think.

J. C. MELCHER.

O'Quinn, Tex., Apr. 10, 1889.

If your object were to raise *bees*, without any regard to getting surplus honey in sections, no doubt a square frame would be best; but I think a perfectly round one, in the form of a barrel-hoop, would be better still; but if the bee-keeper wants to get every drop of honey possible into the sections, and does not care particularly for increase, then I feel satisfied that he wants a frame something like the one that father Langstroth gave us years ago—a frame that will permit the section boxes to come down quite close to the heart of the brood-nest. Some of the friends want them even shallower than the Langstroth frame. The great bee-keeping world seems to have so settled down to something like the Langstroth frame, especially where we want comb honey, that I think we might as well accept it as the standard.

SUPERSEDURE; AND IS THERE ANY PREVIOUS INDICATION OF IT?

1. How can you tell when bees are going to supersede their queen? 2. If a worker bee—an imperfect female—loses its sting after using it, and its life, why does not a queen—a perfect female—share the same fate under similar circumstances?

Atlanta, Ga., April 8, 1889. T. E. HANBURY.

1. We do not know of any way to tell positively when bees are about to supersede their queen; but as a rule we may say that queen-cells started at some other season than swarming time rather indicate it. And if at the same time the queen does not seem to be producing very much brood, then we have every reason to think she is about to be superseded. It is my opinion, however, that queens are often superseded when there is no apparent reason. 2. Worker bees,

when they sting each other, do not generally lose their stings. The queen rarely ever stings a human being; almost the only occasion when she uses her weapon is to sting a rival. If the *worker* bee does not lose its sting when it stings one of its fellows, it is not at all likely that the queen would lose her sting when she uses it upon another queen.

SETTING SAWS; HOW TO DO IT AND HOW NOT TO DO IT.

I noticed in GLEANINGS for Feb. 15, an article by William Young, inquiring how to set a circular saw. Now, if he takes my advice he will use the spread and spring set. Spread the teeth just enough to keep the tooth full width, or a little wider, as the saw will run lighter. Do not set them with a hammer, as it will reduce the width of the teeth, and it is liable to break them off. Spring them by some other means. Joint your saw carefully, and set evenly. When you file, you want to file by ear; that is, get your ear used to it, and you will get it right every time. This is my way of doing it. I have been a sawyer for 20 years, and have all kinds of saws.

B. BAKER.

Elyria, O., Mar. 1, 1889.

Your letter was shown to our foreman, Mr. Warner, and he says what you say is entirely orthodox.

NOTES AND QUERIES.

We solicit for this department short items and questions of a practical nature; but all QUESTIONS, if accompanied by other matter, must be put upon a SEPARATE slip of paper with name and address.

FLOATING APIARIES ON THE NILE.

YOUR remark at the bottom of "Floating Apiaries in Egypt" quite amused me, about your idea of the man in the stern smoking his pipe. You should see the Arabs assemble together and lie down flat on their bellies, smoking or gaming, the laziest set of people; but the hives on the boat are European shaped, while I don't think they have any of the kind, but as described in the article, and then there were certainly much more than eight.

PH. J. BALDENSPERGER.

Jaffa, Syria, March 22, 1889.

TO FOLD DRY ONE-PIECE SECTIONS.

I see considerable advice on how to fold sections without breaking when dry. There is no use to carry them into the cellar over night to dampen. Edge them up on a board and pour hot water through the grooves; let them lie for 15 minutes. Your readers will succeed every time, without breaking them.

M. B. BERGEY.

Souderton, Pa., Mar. 28, 1889.

EXTRACTING IN CALIFORNIA.

One hundred miles from here, in California, they are extracting, but I do not think they get quite such fine white honey there, nor of the same flavor. Our harvest will not commence until June, although the bees are quite busy now on the blossoms, and lots of brood in the hives. I don't know how I shall like the supers, but will let you know which I prefer, in the fall.

E. A. MOORE.

Reno, Nev., Apr. 3, 1889.

Bees are booming fully 20 per cent better than last year at this time.

S. L. KLUTTS.

Clear Creek, N. C., April 12, 1889.

ENCOURAGING FOR CALIFORNIA.

There was 7 inches of rain three weeks since. This makes every thing boom.

R. WILKIN.

Ventura, Cal., Apr. 1, 1889.

THAT ABSCONDING SWARM OF MRS. CHADDOCK'S.

The queen that was left under the goblet belonged to one of the swarms that absconded. The swarm was not joined by any other swarm, but went off alone. Generally bees do come back to the queen. I clip all my queens' wings, but I do it early in the season, and they might possibly have a new queen by swarming time. The one mentioned had her wing clipped.

MAHALA B. CHADDOCK.

Vermont, Ill.

[I am quite sure, my friend, that your absconding swarm did have a new queen. Where they got her is another question.]

SIDE VS. TOP STORING.

I have 8 swarms of bees; 2 of them are in hives, with sections at the sides of the hive. Do you not think the bees would enter the sections quicker if they were on top of the hive?

W. C. MARSH.

McLane, Pa., Mar. 27, 1889.

[The bees will enter the sections quicker at the sides, usually, than above; but the objection to side storage is its inconvenience, and also the fact that there is not room sufficient for storage of a very large amount of comb honey. Top storage is now generally preferred.]

BLACKS AND ITALIANS.

Why is it that Italian bees do not carry any pollen? I have two colonies of blacks and one of Italians. The blacks are busy carrying pollen and honey, while the Italians are bringing in honey only, from maple bloom.

R. I. CROMLEY.

Muncy, Pa., March 22, 1889.

[The Italians do carry pollen, and, as a general thing, more than the blacks. If, however, honey were to be had, I rather think the Italians would put in their time on the honey while it lasted, and depend on getting pollen when they could not get any thing any better. Was it not so in your case?]

CHAFF FROM TIMOTHY SEED.

In March 15th GLEANINGS a friend asks about packing bees with oat hulls. I packed mine with chaff blown from timothy seed while cleaning ours. I think, so far as I have experimented, that it goes far ahead of oat or wheat chaff. Has it been tried before, and with what success?

V. E. FREEMAN.

La Grange, O., March 23, 1889.

[I do not know why chaff from timothy seed would not be exactly as good as that from oats or wheat. I suppose any thing of that sort which one happens to have handy would answer about as well. I should think, however, that timothy chaff might be a little more liable to pack down tight and get moldy.]

ON THE EDGE OF 80 ACRES OF CLOVER.

I have a good place for bees at the foot of the Rockies, with plenty of clover, alfalfa, and wild flowers all around me for miles. I intend to keep my bees at the edge of a clover-field of 80 acres, and in this section it blooms till snow flies, and the flowers are in bloom from April till November.

MRS. M. A. DEPP.

Pueblo, Colorado, Mar. 25, 1889.

[I should think your place would be wonderful for bees. We should be very glad indeed to have you tell us what the crop is from an apiary on the edge of 80 acres of clover. I presume, of course, in your locality you are obliged to irrigate, to keep the clover from dying during the summer drouth.]

OUR QUESTION-BOX,

With Replies from our best Authorities on Bees.

All queries sent in for this department should be briefly stated, and free from any possible ambiguity. The question or questions should be written upon a separate slip of paper, and marked, "For Our Question-Box."

QUESTION 121.—*When a prime swarm clusters, it hangs in the cluster for a certain length of time; and if not hived it goes off. a. What is the longest time you ever knew a prime swarm to remain thus clustered before going off? b. The shortest?*

a. For 21 hours; b. 21 hours. O. O. POPPLETON.

a. Half a day; b. ten minutes.

MRS. L. HARRISON.

a. Thirty-six hours; b. perhaps an hour.

JAMES A. GREEN.

a. I have known them to remain over night. b. I knew one not to alight at all.

A. J. COOK.

Bees never do any thing invariably. I consider it wholly a matter of circumstance.

H. R. BOARDMAN.

I have had them remain 2 days. I have seen them off in 10 or 15 minutes after clustering.

PAUL L. VIALLO.

I have had little experience with natural swarms. We have always had our queens clipped, and have made our increase by division.

P. H. ELWOOD.

I do not remember more than two prime swarms leaving me; one of them was an hour and a half, the other I did not know when it came out.

R. WILKIN.

a. Over night. b. We have, as a rule, to hive the swarms as soon as possible, and advise bee-keepers not to defer the hiving, for no two swarms act the same.

DADANT & SON.

I never had a swarm cluster and then leave. In fact, I never knew but one swarm to leave that had clustered, and I don't know how long that had been clustered.

A. B. MASON.

a. For almost 2 days; b. an hour or two. I have seen a first swarm settle for about 10 minutes, and then leave for a hollow tree, in a bee-line. It had, however, a virgin queen, to the best of my judgment.

CHAS. F. MUTH.

When they have alighted in a sheltered place at the trunk of a tree, or upon a fence where a limb or board protects them, I have known them to commence building comb and remain until removed. I have also seen them start to go away before all had clustered.

L. C. ROOT.

a. I've known them to remain over night several times, and I think some of them remained about 24 hours, and they might have remained longer if they had not been hived. b. I think about three hours, but I am not sure, and I never knew many swarms to go off.

C. C. MILLER.

I have known a swarm to thus remain two days. I always consider it somewhat risky to leave them over ten or fifteen minutes. I can not answer the second part of your question, for I never had a colony leave their new home when I knew how long it had been clustered, out of the many thousands I have hived.

JAMES HEDDON.

Oh! I don't know. Small second swarms I have known to hang to the limb of a tree in the grove for several days, and even build comb; but large swarms will usually decamp if not hived within a

few hours. For many years I have not had an opportunity to observe the time, nor have I taken special pains to experiment in this direction.

GEO. GRIMM.

a. From 2 P. M. to 10 A. M., when the weather was pleasant. If a storm comes on during the night they hang till they starve, or a pleasant day comes. b. I have known of their going off without clustering at all. When they do cluster it is a rare thing that they stay less than half an hour.

G. M. DOOLITTLE.

I knew a swarm to settle on a gooseberry bush and stay there until they had built combs and hatched bees. They were then hived and worked well in the hive. The queen's wing was not cut. I have known a swarm to cluster and stay 24 hours, and then go off. I have known swarms to go to the woods, right from the hive, without clustering at all.

E. FRANCE.

What queer creatures we are! Notwithstanding long experience with hundreds of swarms, I don't know that I can answer either question precisely. Bees which come out without being seen, I often discover when they start to go off. This is often the next morning, about the time it gets to be nice and warm and dry. From the nature of the case, the exact number of hours can not often be told. And how am I to know but that in some cases they may have hung waiting for two nights? I think three or four days has been reported. Sometimes they stay always, and build comb, and continue camping out until the winter kills them off; but I have never had such a case. As to b, I dimly remember a big swarm that alighted in the pear-tree after I was tired and disgusted with swarms. I continued reading for a little while before going to attend to them; and when I went, lo, they were gone! If you will take the number of minutes a body reads when he just reads a little while, and subtract the number of minutes they had been gone when I looked—why, that will save me the trouble. If we take prime swarms inside of half an hour after they become quiet we shall not lose many, I think.

E. E. HASTY.

One or two speak of swarms remaining where they cluster, not only for several hours, but for days, weeks, and months. In California it is very common for them to build comb right where the swarm alights, and stay there permanently; but I believe that Prof. Cook and E. France are the only ones who say they have known a swarm not to alight at all. Where they have selected a location before swarming, I think quite a good many go straight from the hive to the hollow tree. The reason why so little is said about cases of this kind is because nobody sees them at all.

QUESTION 122.—*When do you prefer to hive a swarm—as soon as possible after it issues, and before all have clustered, or after all have fully settled, or some time after settling?*

As soon as they have settled. E. FRANCE.

As soon as possible after it issues. GEO. GRIMM.

Just as soon as the majority are clustered.

P. L. VIALLO.

As soon as they have fully settled.

MRS. L. HARRISON.

Just as soon as possible after they issue.

H. R. BOARDMAN.

I prefer to hive a swarm immediately after they have fully settled. C. F. MUTH.

The hiving succeeds both ways; but it is a little easier after all the bees have settled.

DADANT & SON.

If not expecting other swarms, I prefer to allow nearly all to cluster, but I do not consider this at all material.

O. O. POPPLETON.

As soon as convenient, after all or nearly all have clustered. Generally, though, I make them return and hive themselves.

JAMES A. GREEN.

I have had so little experience that I don't know; but I suspect it may be best to hive them just as soon as they are fully settled.

C. C. MILLER.

I should prefer to hive a swarm as soon as possible after it issues. The most of my swarms cluster in a hive on the old stand. I keep one wing of all fertile queens clipped.

A. B. MASON.

If I had a natural swarm I would secure them in the hive as soon as I could after they had settled; but I am not an advocate of natural swarming. If I had a box hive I would practice a better method.

L. C. ROOT.

I prefer to catch the queen, whose wing is always clipped, and let the bees hive themselves. They usually come back in less than one hour, often in ten or fifteen minutes. They rarely fail, however, to cluster.

A. J. COOK.

I prefer to hive a swarm after nearly all the bees have clustered, under ordinary circumstances. The kind of bees and the alighting-place have something to do with it; also your method of hiving; just the right amount of fine sprinkling helps wonderfully.

JAMES HEDDON.

I aim to hive bees as soon as they have clustered enough so that my working will not prevent their settling; or, rather, I place my swarming-box among the bees and let them enter so as to be carried, as soon as settled, to the hive, thus lessening the danger of other swarms joining them.

R. WILKIN.

When I get ready. As all of my queens have their wings clipped, I can hold them in the cluster as long as I please. I have many times had them get tired of my motions, uncluster, and go off, leaving the queen hanging in a large wire-cloth cage to a limb or swarming-pole; but they soon came back and clustered with the queen again. If I did not clip my queens I should hive the swarm as soon as two-thirds of the bees had clustered, if I could get to it as soon as this.

G. M. DOOLITTLE.

Don't try to make beds before people get up, nor to hive bees before they have had their flurry out. It would probably be a little better to keep them waiting awhile; but the difference is so trifling, and the danger of losing them so serious, that no time should be lost after all are quiet. In my own practice I often make them wait until nearly sundown before they are hived, when so many swarms come out that I have not time to attend to them. This I can readily do, as I always keep a plenty of little pits in the ground handy by, into which I can chuck them; and the baskets in which I take swarms all have legs tacked on to them. When things work just right, most of the swarm alights on the basket in the first instance, and never on the limb at all.

E. E. HASTY.

Quite unanimous. Friend Hasty, however, says, "Don't be in a hurry." I have

seen so many swarms go off, however, because we had not got quite ready to take them down, that I would get a comb of brood among them just as soon as it could be done; and this brings us to 123.

QUESTION 123.—*What special means, if any, do you use to prevent the absconding of a swarm after it is hived?*

Give it a frame of unsealed brood.

C. C. MILLER.

Give a frame of brood and shade.

A. B. MASON.

I usually give the swarm a comb of unsealed brood.

R. WILKIN.

I use no other means than to give them a clean cool hive.

C. F. MUTH.

Only make them comfortable by giving shade if the weather is hot.

H. R. BOARDMAN.

I keep my queens' wings clipped; and if one should become dissatisfied I give it a comb of young brood.

GEO. GRIMM.

I put in brood, in all stages. Notwithstanding the assertion of some of our best bee-keepers, I am fully persuaded that it does good.

A. J. COOK.

By putting a frame of uncapped brood, it is very rare that a swarm will leave the hive. I use a frame of brood and one of honey.

P. L. VIALLO.

Usually none, except to place the hive in the shade if the weather is warm. On some special occasions, with peculiar or cranky swarms, I have given a frame of brood.

MRS. L. HARRISON.

Of late I have used none, but think I shall return to the old plan of giving a frame of unsealed brood, as last summer I had to hive some swarms several times a day for nearly a week. Of course, I keep my queens' wings clipped.

JAMES A. GREEN.

Clip the queen's wing; then if they try to go off, the queen can not go, and the bees will return to her. Then if I were there, or had an assistant there at the time, I would cage the queen for a week, and leave her in the hive, of course near the tops of the frames.

E. FRANCE.

1. Avoid having any natural swarms to hive. 2. Hive them in a clean cool hive, and be sure to give it proper shade. A comb of brood placed in the hive will also induce them to stay. If the wing of the queen be clipped, the bees will not go to the woods without her.

L. C. ROOT.

First swarms do not abscond except when something is offensive to bees in the hive, or when the bee-keeper before hiving has given them comb, containing or smelling of honey, which has attracted robbers. Second swarms sometimes leave the hive, to follow the young queen in her mating-trip. If you desire to be secure, give them a comb of young brood, after (not before) hiving.

DADANT & SON.

As I have never had more than two or three swarms, during all my twenty years of bee-keeping, leave their home after being hived, I find it unprofitable to take any precautions against it. When they do start out, do not expect them to alight, but get after them with double force, with the Whiteman fountain pump, and, nine chances out of ten, they are yours. After re-hiving you might slip in a comb of young hatching brood.

JAMES HEDDON.

Ordinarily I give the new swarm a frame of brood, but not always. I am, however, very particular in having the hive well shaded, for two or three days at least. As I have never had a swarm abscond after being hived, my knowledge of what is necessary to prevent their doing so is theoretical only.

O. O. POPPLETON.

I do not find any special measures needful, if the bees are entirely unmixed with others. I have no especial spite against a frame of brood; but as a minute in "pudding time" may be incalculably precious, I do not usually take pains to give brood. Mixed bees are, with me, very apt to kill all the queens; and, of course, they must have brood given them in every case. To be entirely sure of badly mixed messes it is necessary to imprison them, hive and all, in a pit for several days after hiving.

F. E. HASTY.

Swarms having clipped wings do not abscond; and as I keep my queens' wings clipped, none go away; or, in other words, I have not lost a swarm by their going away during the last 18 years, having allowed natural swarming all of the time. I do not allow second, or after-swarms. If I did, the case might be different, for such queens must have their wings till they get to laying. Some put a strip of perforated metal before the entrance of all prime swarms, after they are hived, which is a sure preventive, as the queen can not go with the absconding bees.

G. M. DOOLITTLE.

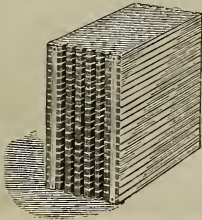
I am glad to see so many friends support me in my oft-repeated instructions to put some unsealed brood with every cluster of bees, under all possible circumstances, whenever they are removed from one place and put in another. We are not always sure they have a queen, and, of course, they will scatter around and get lost very soon in the absence of a queen. The unsealed brood fixes every thing sure in any event, and indicates in a very few hours the want of a queen when such is the case. How often we hear novices worrying about their bees, and saying, "I am afraid they have no queen." Sometimes I reply, "Why, you might as well say you are afraid you have no horse, and keep looking at the outside of the barn, without even opening the stable door." I often reply, further, "Why, look and see." Then the answer comes, "Well, I can't find any queen; and, in fact, I should not know her if I did find her." I should not wonder if there were hundreds of the readers of GLEANINGS who are in just that predicament now. Well, my friend, you can tell, even if you do not know a queen. If you put in that frame of unsealed brood we have been talking about, you can tell in a very few hours whether there is a queen in the hive, even if you know almost nothing at all about bees. Just learn to watch for queen-cells, and then this comb of unsealed brood is like the steam-gauge to the engineer. He glances at the gauge, and he knows when every thing is all right. I want some unsealed brood with every colony of bees in the apiary, queen or no queen, new swarm or old swarm, nucleus or full colony. So far as my experience goes, it never does any harm, and it is pretty sure to do some good under all circumstances.

RECENT DEVELOPMENTS

CONDUCTED BY ERNEST R. ROOT.

DOVETAILED HIVES IN THE FLAT.

THE feature of dovetailing on the new hives enables us to send them out in the flat for less money than we should otherwise be able to do. The expense of crating is almost nothing compared with crating ordinary hives. To crate 20 sides or 20 ends (enough for 10 bodies), all we use is four strips of wood $\frac{3}{4}$ inch square, and in length equal to the height of the pile of sides or ends, as the case may be. The dovetailing is just $\frac{3}{4}$ inch wide. Into the outside groove, at each of the four corners, we drive one of these strips. A single nail driven through the end of each one of these strips into the top board and bottom board secures the strip. Four of these strips hold the pile of sides or ends perfectly rigid without other crating. The accompanying engraving will make the idea plain.



TWENTY DOVETAILED SIDES CRATED TOGETHER.

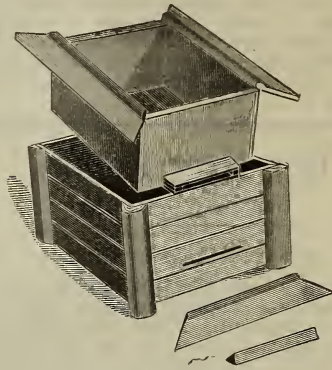
The two light strips of wood in the perpendicular groove in each corner show how the cleats are secured. Whatever little additional expense there may be attached to dovetailing, it is entirely made up by the cheapness of the crating of the sides and ends. Even the super sides or super ends can be slid in among the hive sides or ends, and make one complete and whole package. Our foreman says that we have now made something like 1200 hives; of this number sent out, not one report has been received of this sort of package breaking. Just think of it! Four strips of wood and eight nails make the entire crating for 20 sides.

The small amount of crating not only reduces the expense of putting up these hives for shipment (a saving to the purchaser), but it reduces the weight, and, of course, the freight charges. When these hives are to be sent by express, the reduction in charges will be considerable. Can any one now say that the dovetailing is a useless expense?

HOW TO NAIL TOGETHER THE ONE-STORY CHAFF HIVE.

A good share of our customers who buy the chaff hive have trouble in getting it together right; and for their benefit I append these directions. First put together the outside shell. Nail the four pieces of siding to one pair of corner posts, beginning at the top, and making each one to reach clear up into the corner. After having nailed together the other side in like manner, then nail in the siding for the ends, the latter abutting

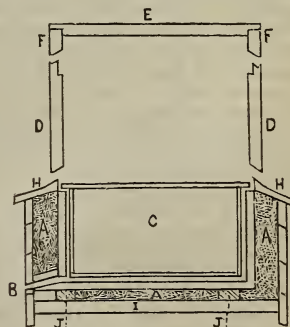
against the four sides as shown in the engraving. Be sure to observe this point, or the dimensions of the outside shell will be wrong. The inside box, or brood-chamber



ONE-STORY CHAFF HIVE, AND HOW TO PUT IT TOGETHER.

proper, is then to be nailed together. As the side pieces are rabbeted, no mistake can be made by getting them together wrongly. One of the bottom-boards to the inside box projects far enough to make a doorstep, as it were. On each side of this lay one of the $\frac{3}{4}$ in. square short strips. Upon these lay one of the 2x9 boards, and a similar board is to be placed on the under side of the doorstep to strengthen it. Then nail the whole together and you have an entrance or passageway much like that shown in the engraving above. See B in diagram below.

Now, instead of setting this shell down inside of the other, first nail on top of each side of the inside box the two side rim pieces, shown in the cut above. Set the inner box down into the outer shell and adjust to position. Having made the inside entrance match with the outside, nail the two side rims to the four corner posts, after which insert the two end rims, and nail to the inside and the outer shells. After having done this, slide four little pieces of tin, beveled slightly, into a groove which you will find in the miter between the end and side rims. Having made sure that the entrance match-



CROSS-SECTION OF CHAFF HIVE.

es with the side board shown in front, nail fast. The little three-cornered piece lying in front is to be nailed just below the slot-

ted entrance. The hive is now complete except packing with chaff. To do this, invert the hive, pack with chaff, preferably the wheat chaff. Tamp it well down until full. Lay in a couple of cross-strips as per diagram J J, and nail to the two opposite bottom side pieces. Level up with chaff, cover with the tarred paper, and last of all put in the bottom-boards and nail to the strips J J.

OUR OWN APIARY.

CONDUCTED BY ERNEST R. ROOT.

HOW THE BEES WINTERED.

OUT of a little less than 200 colonies, we lost two—making a percentage of only one per cent. These two colonies had plenty of stores in the hive, though none on the combs on which they were clustered. A good deal of brood was started in one side of the hive. A cold snap of weather coming on, and the bees refusing to leave the brood, starved, leaving a couple of combs filled with capped stores on the opposite side of the brood-nest. This sometimes happens with us, but not often.

DISPENSING WITH LOOSE CHAFF IN WINTERING, AND ITS RESULTS.

This year we left off all loose chaff in packing our colonies, and used nothing but an ample burlap chaff cushion. In years gone by we have used two or three inches of chaff between the cushion and the burlap sheet; but every time it became necessary to examine the colonies so packed we were obliged to gather together the corners of the burlap, lift it out with its load of loose chaff very carefully, and deposit it on the ground where it would be subject to every little eddy of wind. Using as much care as we could, we continually spilled considerable chaff among the bees, and of course this meant, the next spring, scooping out and perhaps turning the hive bottom upward, to clean it. Aside from the inconvenience in making examinations, it is considerable trouble to put it on in the fall and remove it in the spring. I accordingly decided last fall, that we would use large baggy cushions instead of loose chaff and small cushions, and the result has been just as good as any year we have wintered bees. We formerly thought it was necessary to use the loose chaff to prevent the bees from coming up; but if the cushion is tucked carefully in the corners there will be no trouble. Perhaps I should add, in this connection, that the cushion should be filled very loosely with chaff, and should be a little larger than the upper story of the hive, so as to fit snug and prevent all possibility of currents circulating down to and from the brood-nest. In another column it will be seen that our friend A. E. Manum has likewise abandoned the loose chaff, and he speaks of the very great convenience he finds in dispensing with it. It is just fun to make examinations compared to what it has been during early spring.

NEW HONEY.

Some discussion has arisen as to whether bees gather honey from maples. I feel pretty sure that our bees gathered largely from this source this year, because there was little if any thing else in bloom. When going over the colonies we noticed a great many combs containing some unsealed raw nectar. Into several of the combs I punched my finger, and transferred the same to my mouth. The flavor was not unlike that of new maple syrup. You may say that I stretched my imagination a little bit. I do not think I did, because the flavor was very distinct. The stronger colonies must have obtained an average of two or three pounds; and, as may be imagined, it had a stimulating effect on brood-rearing.

TOBACCO COLUMN.

CONDITIONS UNDER WHICH WE GIVE SMOKERS TO PERSONS WHO STOP USING TOBACCO.

First, the candidate must be one of those who have given up tobacco in consequence of what he has seen and read in this department. Second, he promises to pay for the smoker should he ever resume the use of tobacco in any form, after receiving the smoker. Third, he must be a subscriber to GLEANINGS. Any subscriber may, however, have smokers sent to neighbors or personal acquaintances whom he has labored with on the matter of tobacco-using, providing he give us his pledge that, if the one who receives the smoker ever uses tobacco again, he (the subscriber) will pay for the smoker. The one who receives the smoker in this case need not be a subscriber to GLEANINGS, though we greatly prefer that he be one, because we think he would be strengthened by reading the testimonials from time to time in regard to this matter. The full name and address of every one who makes the promise must be furnished for publication.

RUM AND TOBACCO, AND THEIR BIG FAMILY OF CHILDREN.

BRO. ROOT:—I send you a short article on tobacco. I do feel that, as Christians and refined and enlightened people, we should come out boldly on this awful evil. I tell you, it's one of the greatest causes of greater sins and poverty. People here are too poor to hardly get their salt, and yet pay \$5 to \$30 per year for this worse than useless weed, besides the awful example. I have reasons to denounce it, for it has about ruined one precious boy of mine. I speak plainly. Rum is the Devil, and Tobacco his wife, and they have a big family of children, both old and young.

Since reading Mrs. Ratcliffe's valuable article on the evils of tobacco, I have felt like shouting. Thank God, she dares speak out for the good of the world. I have proposed a tobacco pledge in the temperance pledge, but I have met such opposition by tobacco-users that it is of but little use. I am convinced that the appetite for rum is stronger by using tobacco (though I never used either), but—eyes can see. We have a new law here, forbidding its sale to boys under 16, but the desire to sell and the desire to use are so strong it will go about the same. The use of it is on the gain, and will be till the whole people take hold to put it down. But very few dare speak against it, and yet many users are honest enough to denounce it; but, by their fruits they are known.

Isn't it one reason of the cause of Christ being so slow, our church people indulging in this soul and body depressing, useless weed? I won't judge any one, but it seems to me this is a great appearance of evil; and is it not leading our precious

young boys—yes, and girls, astray? You know the best are always chosen as examples when one means to excuse a sin or bad habit. Such and such persons are sighted; thus such are far more responsible than those who do not profess better things. It's a sad sight to see 7-year-old boys, with a sickening cigar, walking the streets. Who can come up and say it's all good? and who is going to chide these for so doing? Not the ones who sell it—no, for they tell us there is a big profit on tobacco, and that they couldn't do business if they didn't sell it. Doesn't the rum-seller say the very same thing? Are we as human beings willing to succumb to such ruinous courses? How easily the sale of this poison has crept into all or nearly all the grocery stores, and Christian traders too. Well, many come up and assert that, if they don't sell it others will. I may say if I didn't rob some one, some other person would. Oh! I ask again, isn't it late enough already for even a few to fight this evil, and be a crank or a fool for Christ's sake?

Hallowell, Me.

E. P. CHURCHILL.

What you say is *excellent*, but I think all of us will have to be a little briefer, as we say in the prayer-meetings, to make more room for the new converts. Just listen to them now, and see if you do not agree with me that their testimony is more inspiring than whole sermons from our most learned divines.

I need a new smoker, and I have decided to quit the use of tobacco entirely. If you will send me a smoker, if I ever use tobacco again I will pay you for the smoker.

CHAS. CRANING.

Courter, Ind.

Please find two more claims for the bee-smoker. Mrs. Fannie Bitticks says she has been using tobacco for 20 years. I gave her a few copies of your journal, and she read the same; and when she came to the Tobacco Column she said she would quit too for a smoker, and she quit. If you will send her the smoker I will see that she keeps her pledge; and if she does use it again I will send you 75 cts. for the smoker. Also please send a smoker to Mrs. Bill Ealey, Hickory Creek, Ark. She, seeing your offer, has quit the use of tobacco for a smoker. I will see that she keeps her promise.

Ozan, Ark.

J. W. TAYLOR.

May the Lord bless you, friend T., for your labors, especially as you have made such a start among the women-folks. If "the hand that rocks the cradle is the hand that moves the world," just think what the result of your labors may be, in view of future generations. We notice still another convert of yours in Anthony Clark, a little further on.

PAYS FOR THE SMOKER, BUT HAS QUIT THE USE OF TOBACCO AGAIN.

Please find inclosed 38 cts. for Terry's A B C of Potato Culture, and 70 cts. for the smoker I got on the tobacco pledge. I broke it, but I have quit again, and I hope I shall succeed this time, but I shall pay for the broken pledge.

Lynnhaven, Va.

G. W. READER.

Well, friend R., so you paid up for the broken pledge, and started out on a new one. May the Lord bless and sustain you, not only in giving up tobacco, but in being honest, and true to your word. If anybody

should ask me which is the worse of the two evils, to tell lies or chew tobacco, I should say that telling lies is, by all odds.

WHAT A TOBACCO-DEALER THINKS OF THE USE OF THE WEED.

Though I am still in the cigar business, and have been for many years, I think you are right in discouraging the use of tobacco in any form, with all your might. If tobacco and whisky could be entirely eradicated, the world would be benefited almost incalculably.

S. F. HERMAN.

Tuscaloosa, Ala., Jan. 16, 1889.

Why, may the good Father help you, friend H., to go a little further and practice what you preach. I do not really see how you can hand over cigars, with a clear conscience, after giving such testimony as you have above. I am sure you can not do it very long. My impression is, that the cigar business will be given up before these words reach your eyes. Please drop us a postal card and tell me if I have not guessed right.

I read GLEANINGS at Bro. Taylor's; and with the influence of your offer, and that of Bro. Taylor's, I quit chewing tobacco. Now send Bro. J. W. Taylor the smoker, and if I ever use it again I will pay you for two smokers, and Bro. Taylor will go my security.

ANTHONY CLARK.

Ozan, Ark., Feb. 14, 1889.

Three cheers for Bro. Taylor, friend C.! I believe in that kind of signing for your neighbors, every time, for it is a signing for Christ's sake.

ONE WHO HAS USED TOBACCO 27 YEARS.

A brother-in-law of mine, A. W. Banebrake, of this place, has quit the use of tobacco after being a slave to its use for 27 years. He has not used it since the 5th day of November last. He is a beginner with bees; has 5 or 6 colonies. He says if you think he is entitled to a smoker, send him one; and if he ever uses the weed again he will pay you for it. I will also go surety for him.

F. M. SHELL.

Yeddo, Ind.

And may God bless you both, friend S., for your practical way of working together. We gladly send the smoker.

I received your letter, stating that you would have to put my name in GLEANINGS in order to send my brother a smoker. I am perfectly willing you should do so; and if he ever uses tobacco again I will pay you for the smoker.

CHAS. A. PRAY.

East Lebanon, Maine.

Why, friend P., it seems to me as if God were opening up a new work for us in this issue—going security for a brother.

HAS COMMENCED TOBACCO AGAIN, BUT PAYS FOR THE SMOKER.

Inclosed please find 75 cts. for a smoker, which I got from you nearly three years ago for my son to quit the use of tobacco. He has since commenced to use it again.

HENRY L. WEISS.

Berkeley Springs, W. Va.

That is a good testimony too, friend W. Set the example before the younger ones, of promptly paying up according to promise, for such testimonies are valuable, as well as the words from those who first take the pledge.

In reply to your letter about the smoker, I would say that my friend would not let me send his name for publication, saying he did not want it published to the world that he had stopped using tobacco. I do not know that it was entirely through GLEANINGS that he stopped, but I have lent him numbers to read, and I suppose they influenced him. I did not know that you required the name of the person making the pledge, if he was not a subscriber. As he will not let me send his name, and that is the rule, I would by no means send him a smoker. He does not deserve it, he is so cowardly.

East Sydney, N. Y.

LESTER JUDSON.

Do not be too severe on your friend. Our clerks, it seems, have been a little at fault. Your friend need not give his name at all unless he chooses (although I do think it a much better way), providing somebody like yourself will give his own name and go security for his friend. This Tobacco Column seems to be pretty much all in line of "I am my brother's keeper."

SPECIAL DEPARTMENT FOR A. I. ROOT, AND HIS FRIENDS WHO LOVE TO RAISE CROPS.

AIR-SLACKED LIME, APPLIED TO THE SOIL, AN AN INSECTICIDE.

ON page 235 of our issue for March 15, I mentioned the use of air-slacked lime as a preventive of club-root in cabbages, and I also made mention of its property of killing angleworms, etc. I believe it has been well known to gardeners, that lime-water, even a good deal diluted, is sure death to angleworms in pots; and I have found that, say, ten barrels to the acre will kill almost if not all of the angleworms in very rich, highly manured ground for market-gardening or for strawberries. Now, friends, I am pretty sure there is something better still, right along in this line. This spring our plant-beds were all treated to a pretty liberal application of guano and lime. They were sifted on to the ground, and raked in, while the mixture gave off a strong smell of ammonia. Well, so far this spring we have not seen a single specimen, on these beds, of the little "jumping jack," or cabbage-beetle. It is the same insect that damaged the *Rural New-Yorker* folks in their potato experiments; and we have pretty good authority for saying that the larvæ of this same insect causes the club-root in cabbages, and spoils our radishes. Who has not tried to raise radishes, and found them so scarred and disfigured, and even eaten up with minute maggots, that the crop was a failure? Well, radishes raised on our plant-beds have perfectly bright, smooth leaves, with not a scar from the jumping jack, and the roots correspond exactly. There is no such pest in our plant-bed grounds; but up in our swamp, where we sowed some radishes in the peat, the jumping jacks are just as bad as they ever were, and more than half of the radishes are eaten up outright. Now, if air-slacked lime, put on strong enough, kills the larvæ, and thereby banishes the

mature insect, why will not the lime, if used strong enough, destroy *all* the bugs and insects that harbor in the ground? Prof. Cook will have to help me out here; but I am pretty sure that the striped melon-bug, and perhaps our potato-beetles, may be greatly injured if not banished by using plenty of lime. I know they come out of the ground, because I have seen them come up under my plant-boxes. The office of the lime, in liberating ammonia from any heavily manured ground, I think will recompense all it costs. Our plan is to spread the lime with a manure-spreader, after the ground is plowed and harrowed, and then harrow it again, to mix up with the soil. We have never seen plants injured by lime, no matter how strong we put it on—that is, where it is thoroughly pulverized and raked into the soil to a considerable extent. I want Prof. Cook, and W. J. Green, of our Experiment Station, to tell me if I am not at least partly right in this matter.

SENDING OUT COMMON WEEDS AS NOVELTIES.

While I am exceedingly glad to notice the energy and zeal with which our seedsmen bring out and have tested every thing new and valuable in the vegetable world, I do feel like uttering a vehement protest against the dissemination of weeds, especially where they are of little or no value. I have just now in mind the "upland water-cress," advertised in many of our seed catalogues. As we have not a running spring suitable for water-cress, I hailed the advent of an upland cress with much joy. They were started in the greenhouse, and a long row, put out in my best ground, only to find, when they arrived at maturity, that they are exactly the same thing as a weed that is found all over this vicinity, and has been for years. It seems to be a sort of cross between horseradish and wild mustard. It tastes more like horseradish leaves than any thing else. The leaf is rounder, more like mustard. The root has no flavor like the horseradish at all, and I have never found anybody who cared to eat the tops at any stage, as a substitute for water-cress. If you ask what seedsmen I am driving at, my reply is, every seedsman who advertises the upland cress. You may say that he doubtless supposed it was all right. Well, my friend, I do not think that any seedsman has any business to advertise any thing he has not first *tested* on his own grounds. If he has not any grounds to test things on, then I should say he has no business being a seedsman.

QUESTIONS ON CARP-RAISING, ETC.

What is the commercial value of carp, if any? How many can be raised in a pond covering one acre, if well cared for? Will they smother in winter from ponds freezing? The same questions in regard to catfish, if you can.

Is Japanese buckwheat honey-producing?

Topeka, Kan.

H. G. LYONS.

Our new book gives you all the information we have in regard to the ponds you mention; but I might answer briefly, by

saying that you can certainly raise as many pounds of carp on an acre as you could of chickens; and they are worth in the market certainly as much for food. At present I believe they bring a little more. The carp will not require any thing like the amount of care that chickens do; and I think I am correct in saying nothing like the amount of food. They will not smother in winter from ponds freezing over. We can not answer in regard to catfish. — Japanese buckwheat produces probably just as much honey, if not more, than the common kind. You must remember that all varieties of buckwheat, as well as every thing else, for that matter, that yields honey, are liable, under certain conditions, to give none at all, even though the fields be white with bloom.

RASPBERRIES AND POULTRY, IN CONNECTION WITH BEE CULTURE.

I send you a sample of ensilage from a kegful that I packed for my poultry. I had been wanting to save something of the kind for years for the long winter season, so as to help make a variety for them. The article I saw in GLEANINGS, about ensilage, last summer, stimulated me so that I put the idea in practice. I often wanted to save cuttings from a lawn, for they looked so sweet, and are about the right size for a mouthful for a hen. I shall try saving some next year. What I send you is raspberry leaves stripped from the cuttings of my bushes in the fall. They have a very sweet-smelling flavor, and I hope there will be a little left in the sample I inclose, after the journey, so that you will know how sweet they are. I made only one kegful for an experiment. It was a honey-keg capable of holding 200 lbs. I stripped the leaves off in the garden into a bushel basket. I must have put fully 15 bushels into it. I kept a weight of about 150 lbs. on them as I packed them. This weight kept me filling up a little every day for a few days, and they were pressed so tightly that they excluded the air, which I believe is all that is necessary for their preservation. Some of the leaves were half dry with the sun, while others were quite green. I was careful, however, not to put any in while there was any rain or dew on them. They were a little musty on top, but I believe that the rest of the keg is as sweet and nice as the sample sent. I usually scald it, putting a handful or two in the water that I boil or scald the ground feed with. I do not know of any thing better that can be combined with poultry than bees and raspberries. The best raspberries I ever had were picked from bushes where poultry had been allowed to run until the fruit was nearly ripe. They keep down the suckers, and the strength seems to go all to fruit.

Manistee, Mich., Jan. 12, 1889. WALTER HARMER.

The raspberry ensilage came to hand in nice shape, and is just as you describe it. I know that it is very important that poultry have some sort of green feed in the winter time; and I do not know why your ensilage will not fill the bill exactly.

ANOTHER WAY OF PRICKING OUT CABBAGE-PLANTS, ETC.

My way of pricking out cabbage, tomato, and celery plants from the seed-boxes into others a little apart, is to tilt the one end toward me on some block, at an angle of about 45°, and commence by

placing a layer of earth $\frac{1}{2}$ inch or one-inch, as the case may be, on the lower end, making it smooth and even; then lay a row of plants any desired distance apart on this, pressing them in with the left thumb to make them stick; then another course of earth, etc. At the last, begin at one side and bring the single row across. I can spread the roots, put them any depth desired, do it quicker, and I think nicer, than with the dibber.

ANOTHER WAY OF BANISHING THE "JUMPING JACK."

To prevent jumping jack from eating the first leaves of cabbage, turnip, etc., put about a tablespoonful of spirits of turpentine to 1 lb. of seed, stirring it well so that all seeds come in contact with it. As a farmer, who used it in turnip-growing, said, after they are up, pinch them between the thumb and finger and they smell quite strong. It seems quite reasonable, too, as the seed of this forms the first pair of leaves. I have not tried it, as it was too late last year when I heard of it.

Minesing, Ont., Mar. 22, 1889. THOS. STOKES.

The turpentine may answer, but I believe I would rather take my chances by raking into the soil a good lot of quicklime, as I have already mentioned.

THE IGNOTUM TOMATO, AGAIN.

Your articles in regard to the Ignotum tomato, I read with great interest, as I have 465 seeds of the same kind. When our State fair was at Jackson last fall I noticed a beautiful plate of fine tomatoes in the exhibit of the Agricultural College. I was informed by the manager of the exhibit that they were originated at the State Farm; and, being deeply interested in the different garden plants, and especially in tomatoes, I asked the gentleman for one so I could have about the first plants outside of the original; but I see you have the start of me, and I guess you and I are the only ones now who have any seed direct from the stock grown at the Farm. By the time this reaches you I shall have part of mine planted for extra-early plants.

A. D. D. WOOD.

Rives, Jackson Co., Mich., Dec. 31, 1888.

And so it transpires, friend W., that somebody besides myself has the Ignotum. Well, it will probably be pretty thoroughly introduced another year, for we have already given away several thousand packages to the readers of GLEANINGS.

SWEET POTATOES, LEVEL CULTURE.

While the sweet-potato topic is up, I rise to state that, on loose prairie soil, it is labor worse than wasted to ridge up the ground for planting sweet potatoes. Level culture for corn, Irish and sweet potatoes, is the successful practice here, where hot dry weather can be depended upon. The sweet potatoes do not grow so long, but are larger, every time.

M. S. BENEDICT.

Crete, Neb., April 6, 1889.

I think the above depends both on the soil and season. In our locality, especially when we have as much rain as we have had for the two past seasons, the hilling-up seems to answer better for almost every thing; that is, where the hill has a broad top. This top then catches all the rain that is needed, while the furrow lets the surplus water off before our clay soil settles down so hard that it bakes like a brick.

THE "BUSH LIMA BEAN" BUSINESS.

At the present writing I have not been able to secure even a single paper of the Kumerle bush lima bean. Very likely somebody has forestalled me. I am going to have a few, however—see if I don't—even if they do cost "awful." The yellow bush lima bean, mentioned in our last issue, page 279, as coming from Minnesota, proves to be, when cooked—that is, in a dry state—just like common bush beans—no lima taste about them. It is simply a yellow bean, a little flattened in shape. Perhaps when green, however, they will taste much different—we hope so. We are going to plant largely of Henderson's bush lima bean. This, it seems to me, is certainly an acquisition; and until we can get a big one we had better make the most of this. Very likely it is earlier because of being so small, and quite likely more productive—that is, it will yield more bushels to the acre. A 25-cent package of these beans will be mailed to every subscriber of GLEANINGS who pays up all past dues to the present time, and sends us a dollar for a year ahead. Please make arrangements during the present month, if you want them, for we expect to plant every bean left in the 1600 papers, by July 1.

WHAT IS THE BEST LAND FOR ONIONS?

What is the best kind of land for raising onions? Will salt, sown on land before sowing onion seed, be useful? If so, how much would you advise me to sow to the acre?

I. JACKSON.

Eau Clair, Wis., Feb. 19, 1889.

Friend J., almost any land will raise onions, providing it is made fine enough and rich enough. On some soils, salt seems to be of some benefit; but I would by no means think of investing heavily in salt until you have tried it on small patches, enough to be sure that it does good. I think you had better invest in our book on onion-raising.

THE KEROSENE EMULSION FOR APPLE-TREE BARK-LICE.

In regard to the bark-louse, I tie bits of soap on the limbs, and the water and snow wash the soap down over the insects gradually.

DR. MARTIN.

Mercersburg, Pa., Jan. 29, 1889.

Friend M., tying pieces of soap in the trees would be a comparatively easy matter; and it seems to me quite likely it might answer the purpose. I presume all you need to do is to put some soap on the limbs you find visited by the bark-lice, taking pains to have the soap higher up than the insects have yet made their way.

SQUASH-BOXES; TRANSPLANTING-TUBES, ETC.

I am a farmer and apiarist, and pride myself on having a good garden. We need in this climate an extra-early tomato and watermelon. I succeeded last year, when my neighbors failed, by using the squash-boxes which you described in your seed-catalogue. They also saved my pie-plant and asparagus from a late freeze. The way I get early tomatoes and cabbage in the last transplanting, I put them into an old tomato-can; and when ready to set out I cut the bottom out and set can and plant in the ground. This also protects the plant from cut-worms.

N. P. ASPINWALL.

Harrison, Minn., Mar. 24, 1889.

OUR HOMES.

By this shall all men know that ye are my disciples, if ye have love one to another.—JOHN 13:35.

AFTER dinner it occurred to me that I had better go and have my boot mended. You may be a little surprised to think that I had been off all that forenoon, wearing a boot with that great gash. Well, to tell the truth, I was in such a hurry to get off into the fields and mountains that morning, I did not think much about my boot. It did not gape open quite so wide on Monday morning as it did on Sunday afternoon. The fact is, I rather forgot about it. When Satan suggested that it looked awful, and that I really must go and get a shoemaker, and insist on his doing so much work on Sunday as a case of necessity, it looked very bad—in fact, exceedingly bad. But when I turned squarely around and shook my fist at him (not the shoemaker, but Satan) and said with energy, "Get thee behind me, Satan," he went away and did not trouble me any more. But I did think, before I started to travel on the cars again, the boot must be mended. I found a very pleasant-faced, elderly man, surrounded by his lasts and awls, right across the corner from that little stone Congregational church. I thought at first I would sit down and talk with him while he mended the boot. Then I began to think I wanted one more drink from those effervescing springs. The shoemaker kindly loaned me his shoes, which were a great deal too large, and I started for the spring I first drank from the day before. The water was very much improved—at least it seemed so, and I liked the people and the surroundings better too. When I got back, my boot was neatly finished. When I remarked that I had been up to the Ute iron spring, the people at the shop thought it incredible.

"Why, mister," said the man of the lasts, "it's almost a mile, and you have not been gone over fifteen or twenty minutes."

I then told him of my tramp of the forenoon; but I did not tell him how awkward and inconvenient his great big shoes were on that last tramp. A bystander remarked, "Why, he is almost a match for Jim —."

"What feat did Jim — do, pray, in the way of walking?" said I.

I don't remember exactly what it was, but the landlord told me of a young man who one summer went to the top of Pike's Peak on foot in one day, and came back down in the same evening, 26 miles in all. My boot was mended very neatly, and the charge was only 15 cents.

"Why, look here, my good friend, you must be a Christian to do as nice a piece of work as that, and charge only 15 cents," said I.

"You are mistaken, stranger. I try to do my work well, and to charge just about what I should like to pay if somebody else did the same work for me. But I have not been inside of any church for more than twenty years."

He said it, I thought, a little sadly, and

yet there was that beautiful little Congregational church right across the corner. I told him, in my poor way, that one who was trying to do by his fellow-men as he would be done by, as he had expressed it, I felt sure would rejoice in being among Christian people. I told him, too, that I had felt hurt and pained when the livery-man close by told me he wanted \$2.50 for a horse and buggy for only two hours. Now, perhaps I am a little uncharitable toward livery-men, and may be toward some of the hotel-keepers. It is said, that, in the winter time, when they have but little custom, they have to charge large prices for what they do get, in order to pay the expenses of keeping up an establishment; and I believe it is true, as a rule, that livery-men and those who run conveyances to and from pleasure-resorts are seldom God-fearing people. It would seem as if it were the most proper thing in the world to find God-fearing men and women to wait on those who come to view, visit, or enjoy nature's wonders in the way of mountain scenery, rivers, lakes, caverns, and the like. In regard to this matter of having nothing to do in winter, the problem is much like the one bee-keepers are obliged to solve; and I think it would behoove the hotel-keepers and the livery-men, who minister to tourists and pleasure-seekers in summer time, to make some other arrangements for men and horses during the rest of the year, and thus make prices moderate. Our rural friends, many of them, feel as if they had been outraged when they are asked to pay a dollar for a meal of victuals while potatoes bring only 20 cents a bushel.

Now, before bidding good-by to Manitou I want to ask my good friend the Congregational minister to make a friendly call on my friend the shoemaker; and maybe he can take him a bee-journal if he thinks best. I wish he would also have a little friendly talk with the boys who board at the Mountain View Hotel, and maybe they will be interested in looking over what I have written. I would suggest that he get on a friendly footing with the folks in the livery-stable. May be, however, it would not be best to give them a bee-journal, for it begins to occur to me that perhaps I have been a little uncharitable toward them; but when Christian people prefer not to pay the prices charged them when traveling, it is certainly their privilege to go on foot, as did your humble servant. Yes, I am not sure but we can perhaps go on our way afoot, with more genuine earnestness and zeal, than in the finest equipage. Now, we must be careful about a want of charity again right here, for it is not every one who has been blessed with strong limbs and energy to do it, as does your friend A. I. Root. If you do enjoy walking, dear reader, and are equal to the task of walking several miles on a stretch, then go this minute, if you have never done so before, and thank God that he has blessed you in this way.

Dec. 18.—It almost makes me feel sad to think the mountains are behind us, and I am told we shall see them no more. To-day, through Nebraska we have little be-

sides mammoth cornfields, and corn-cribs to match—the latter piled full of corn, but no roofs. Huge piles of corn are also seen in the fields.

What an uncertain thing "daily bread" is, in traveling! uncertain in expense, I mean. Last evening I thought to save expense by going to the lunch counter; but a turkey-leg, cup of coffee, and a piece of pie was 45 cents; and as I felt hungry still, I afterward, at another place, got a dish of oysters and a glass of lemonade, 45 cents more, or 90 cents in all, when the regular supper would have been only 75. Economy on the wrong side. At Wymore, Nebraska, I decided to patronize a one-armed soldier, and, taking a lesson from yesterday's experience, I ordered only a dish of baked beans, and coffee. He dished out so many beans, however, that I mentally figured that I was out about 45 cents, or pretty near it, again; but to my great surprise, it was only *ten cents* for the *whole dinner*. This man has a dinner-gong that goes by clockwork, while he, with *one arm*, waits on a dozen customers. I gave him some words of encouragement. What a field is here for practical Christianity! In the large city of Denver, in their large fine depot dining-hall, they charge only 50 cents for a meal. Why can not smaller towns on the railroad do as well? Another thing pleased me: Adjoining this fine dining-room, and in a conspicuous place, was a fine bath-room, close by where trains stop and start out, so passengers, while waiting for a train, can wash thoroughly all over, for *only 25 cents*. Good for Denver!

Near Burchard, Neb., the corn-cribs are several hundred feet long, and the heaps in the field are immense. Thousands of stacks of hay are also scattered over the fields. I am very sorry to notice a good many *mowers* and *horse-rakes* also. Loads of corn, and still larger corn-cribs, are now seen. A man says they get only 20 cents a bushel at the stations, and a lady says some are burning it for fuel. It makes a very hot fire, and one man melted his stove down and burned up his house by firing up too strong with *corn*.

Near Kansas City we strike the Missouri River. It is by all odds the largest river I have seen in my travels *west*—that is, rivers with water in them. I have seen plenty of immense rivers in the great West, but they lacked water when I saw them. From Jefferson City to St. Louis, the broad Missouri River occupies and covers a vast extent of land; but it seems to be, like a meadow brook, continually washing away the bank, first on one side and then on the other. The consequence is, that sometimes miles of drifting sand are interspersed with bushes and clumps of willows, indicating where the river has been at some time, while the running water may be found to have a channel less than a quarter of a mile wide. Judging from the growth of willows and weeds, this bottom land must be wonderfully fertile. It is probably, however, so liable to overflow or wash that nothing has been done with it. If this great sluggish river could be made to take a straight line, and

keep within bounds, vast tracts of the finest land in the world, it seemed to me, might be brought under cultivation. It makes one sad to look over the great barren wastes. Very often the river divides so as to leave islands of large extent in the middle of its bed. It made me think of the great Yellow River in China, that has, by depositing its sediment, and washing one way and then the other, made such havoc with human life. It seems to me one of the greatest things that the world needs at this present time is engineers who are capable of managing our great rivers. I am sure the money could be easily brought forward if we had men with brains, to expend it in the right way.

I am now nearing home, after almost six weeks' absence. Again and again have I dreamed of being back with the loved ones. Once, especially, the rejoicings of the whole family, little and big, were so like a reality that I felt troubled, and assured them there was some mistake.

"What mistake, and how?" asked my wife.

"Why, I am sure this is a dream, for I have not finished my visit. I am *still* in California."

At this there was a shout of merriment from all. As it closed she replied:

"But, *who* is dreaming, my dear husband—*you or ourselves?*"

"Why, I think it must be you, for I *know* I am in California."

Then they all laughed louder and harder.

"We, then, are only 'phantoms of the night,' are we, while you are all right? Look here, sir!" and in a saucy way she came close up to me. "Am I 'thin air?' Am I not a flesh-and-blood reality?"

Of course, I put my arms about her while I replied:

"Yes, you are, and always have been a *blessed* 'reality' to me;" and then while the children applauded, evidently considering it a fine tableau, commenced one of nature's "dissolving views." My home began to grow dim, and fade away; and faster than railroad cars—yes, faster than even the *lightning* can travel—I was borne over desert and mountain, setting thousands of miles at naught, until I rested again in my bed in that cozy room on the mountain-side. But, hold on! One part of that Medina home did not dissolve, for I hear the children's merriment even now.

I raised myself a little in bed. By the dim light of the moon I recognized my surroundings, and remembered going to bed the night before—yes, and even got a glimpse of the little Bible that I was reading in the last thing before I went to bed, as it lay there on the pretty little stand; and vividly the text, "But whosoever shall drink of the water that I shall give him shall never thirst," came back to my mind. I am here in California, just as I declared I was; but what in the world *can* it mean—this sound of merriment and laughter that greets my ears even now—yes, merriment because I so stoutly insisted that I was in California and not at home? Have the real and the unreal become so mixed up that I can not tell positively whether I am asleep

or awake, or has that old fancy that has haunted me in my dreams from childhood, of setting time and space at naught, come true? After I had rubbed my eyes a little more, and after I had listened a little more intently to the sounds of the voices, I discovered that it was not Ernest and Maud and Connie and Caddie and Huber, after all. It was the children I had talked with the night before, in this mountain home. As the good mamma of the household was obliged to get up before daylight, they, childrenlike, wanted to get up too, and had been having their fun while I was sound asleep and dreaming of home.

At the breakfast-table, as I related the above, one of the friends remarked:

"Well, you came out ahead. You, after all, *are* in California." And I hereby give my wife, and all the rest of them, notice, that I was right and they were *all wrong*.

Dec. 19.—How good it seems to see fenced fields again, and to see every one occupied with something! Outside of Kansas City, toward St. Louis, even the small towns seem full of thrift and enterprise. The tall chimneys are sending out clouds of smoke, and little engines, scattered in the suburbs of the towns, commence *early in the morning* to send out puffs of steam. This is what I longed to see in many of the California towns. The houses along all through Missouri are well built, substantial, and pleasing in appearance, and this is true of country as well as town.

Dear readers of GLEANINGS, my long trip is ended. Those six weeks, even though away from home and friends, were six of the happiest weeks I ever spent in my life. One thing that specially contributed to make them happy, was that it was my privilege to have *you* enjoy them with me. I know you have done so, because of the great numbers of kind letters that have come from you in regard to those travels. I prayed as I started out, that God might help me to make the trip profitable for "Our Homes" and "Our Neighbors," and I feel like thanking *you*, for it was through your kind support that I have been enabled to make such a trip. Several months before I started, I felt that God was calling me to that kind of work. I told my wife I knew I should enjoy it, for it was, in one sense, a duty. Do you ask, why not go again, and inform my readers in regard to other countries and other localities? Providence permitting, I expect to go again after a while; but just now I am needed here. Yes, at this season of the year there ought to be two or three A. I. Roots instead of only one. In another part of this number I have been trying to tell you why I am needed at home just now. Many kind words are written to me, to which I can not reply; yes, and quite a few complaints that my old friends have not had exactly the kind of treatment they have a *right* to expect from me are unanswered. Others who are taking my place have answered them as best they could; and yet I know very well, that, at least for some time to come, no one can understand these friends I have known and loved for years, as I understand them myself. But

be patient, friends, for John and Ernest are every day learning more and more to take my place, and to know you as I have known you. It is not altogether things that dollars and cents will make right; but when you feel as if you had been neglected and ignored, do not, I pray you, feel uncharitable. At this season of the year I have steadily refused to go anywhere, even for a single day. I have even refused to talk and visit with my intimate friends and relatives, in order that I may use all the strength I have, to do by you as I would be done by. Sometimes I long to give up business, and not try to look after things as I do at this season of the year. But this feeling is wrong, I am sure. Sometimes I am told that I won't last long at this rate. So far as I am concerned, I do not know that I care so *very much* about a long life; but if by prolonging my life I can be of service to my fellows, then I want to live. If I can contribute to your happiness by living, and if I can, by influence and example, or by working when I am tired and fatigued, be able to lead some soul to "drink of the waters" I have been telling you about, then I am glad to live and glad to work.

During those six weeks while I was away, I felt remarkably free from temptation of any sort. No one vexed me, that I know of, and I did not feel tried with humanity, as I often do here at home. I met wickedness and sin; but God helped me to meet it with more calmness and courage than I do here. It would not be right or well, however, if I should spend much of my time in a life so free from care. The thought that I had *earned* my vacation and holiday helped to make me happy; but real life must be, for the most part, in the busy throng. When Jesus prayed for his disciples, just before he was about to leave them, his prayer was, "I pray not that thou shouldst take them out of the world, but that thou shouldst keep them from the evil." And so it is with us all. Christ's followers are all needed in the world. Where humanity throngs thickest and busiest, there they are needed most. "Ye are the salt of the earth;" and therefore, dear brothers and sisters, let us be content to labor on, especially while it is not for selfish ends that we are bearing toil and care and sorrow, but for humanity's sake and for Christ's sake.

By this shall all men know that ye are my disciples, if ye have love one to another.

A VISIT TO BEE-CELLARS IN NORTH-ERN OHIO.

ERNEST OFF ON A RAMBLE—CONCLUDED.

MR. BOARDMAN, like a good many other prominent bee-keepers, uses a square frame, the dimensions of which, if I remember correctly, are $4\frac{1}{2}$ inches inside measure, square, this size being adapted to nine $\frac{1}{2}$ sections.

"Then you think you prefer the square frame?" said I.

"I do, sir, on account of the compactness of the brood-nest, both for brood-rearing and for the concentration of warmth while

in winter quarters. And then, again, when two of these hives are tiered up, the upper set of frames is just right to handle in a standing posture. With your Simplicity or Langstroth frame you are obliged to stoop a little more in the manipulation of the frames."

"Yes, that is true," I replied. "But then, for comb honey don't you think you lose some advantage in not having a shallow frame—that is, shallow enough to bring the brood nearer the surplus apartment?"

"Yes, there is something in this; but I think this is more than offset by the advantages of the cubical brood-nest in winter."

I noticed that, when he turned up some of the hives, the frames being so deep, some of the bottom-bars touched together, while a wide space was left between the adjoining bottom-bars. Mr. Boardman admitted that this was true too, but he did not seem to think that it made very much trouble.

On our way homeward we talked about contraction. Mr. Boardman's method of contraction is not to reduce the number of brood-frames, but to cut out the combs. To prevent the bees from storing honey in the brood-chamber he leaves on an inch or so of comb attached to the top-bar. As the bees build this downward, the queen fills them with eggs, and, as a matter of course, the honey goes into the sections. With most bee-keepers this would be considerable of a job, I imagine; but as Mr. Boardman uses a side-opening hive, he simply removes the loose side, slices off the combs, replaces the side without removing the cover or surplus arrangement. The plan is quite similar to the one outlined by Samuel Simmins, and later by W. Z. Hutchinson. Mr. Boardman has practiced this method of contraction for several years, and he thinks it is by all odds the best method. After supper that evening we got so interested in conversation, the special topic of which I do not now recollect, that, before we were aware of it, the train which I had intended to take came in, and I half a mile away, enjoying the hospitality of my friend. Well, there was no help for it, and so I waited till morning, and then Mr. Boardman kindly drove me back to Norwalk with one of his out-apiary horses, where I joined the junior Mrs. Root, or, putting aside stiff conventionalities, *Elizabeth*. Be sure to put the accent strong on the last syllable, if you want to get my method of pronouncing it. I regret now that she could not have made the acquaintance of the genial Mrs. Boardman, who, by the way, is not only a bee-keeper's wife, but a bee-keeper herself.

I feel now more than ever the importance of getting out and knocking off the corners. I discover in our correspondence that a great many bee-keepers have set notions. To stay at home with some of us means to get into old ruts. One of the benefits of conventions and of personal visits, as I regard it, is the breaking-down of old prejudices. I believe I am a broader man—certainly a broader bee-keeper—since visiting friend Boardman. While I do not feel convinced that indoor wintering would be better for us, or that the square frame would

be better adapted for the majority of bee-keepers, I see *more* of their merits than ever before. I mean to try his plan of wintering this year, and shall try it alongside of the chaff hives for comparison of results.

GLEANINGS IN BEE CULTURE.

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EDITOR AND PUBLISHER,
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MEDINA, MAY 1, 1889.

Henceforth I call you not servants; for the servant knoweth not what his lord doeth: but I have called you friends; for all things that I have heard of my Father I have made known unto you.—JOHN 15: 15.

GIVING THE PLACE OF PUBLICATION.

SEVERAL of our correspondents, in sending us clippings from other papers in regard to the alleged adulteration of honey, have failed to give us the address and the date of the papers copying such extracts. We are glad to have these clippings sent in to us, but we can not do very much unless we know the address and the date of the paper.

THEIR WEIGHT IN GOLD.

"I WILL give their weight in gold for an ounce of Kumerle's lima beans, such as were advertised and sold by J. B. Thorburn & Co. They must be in Thorburn's envelopes, or I must have satisfactory proof that they are exactly the same that Thorburn sold. I purchased one package before his supply was exhausted, so I think I am prepared to know the genuine when I see it.

200 TONS OF HONEY SOLD.

COMMISSION firms in California handle a great deal of honey. One of them, Messrs. Lacy, Bailhache & Co., of San Diego, Cal., write us that they shipped, during 1887 and 1888, over 200 tons of honey; but as the two years preceding were poor ones their sales are usually much larger. They are making an effort to get bee-keepers to adopt the one-pound section, as they say the demand is strongly in favor of that size.

ISRAEL'S POEM—SEE PAGE 254.

BY an error of the compositor in the misplacement of the pages, some of the lines of the poem entitled "The Starving Colony" were a little out of their regular order. To get the connection right, read the first ten lines; skip eight lines; read eight lines more, then go back and read the eight lines skipped. We say this in justice to Mr. Israel. Our more critical readers may have noticed the apparent disconnection.

THE CANADIAN BEE JOURNAL AND POULTRY WEEKLY.

VOL. V. No. 5 of the *Canadian Bee Journal* has shed its tinted cover, and added in its stead eight extra pages. Half of the journal is devoted to bees, and the other half to poultry—the latter department being edited by W. C. Peter, an extensive breeder, and authority on all matters pertaining to

fowls. Altogether we think the change is an improvement, and we trust that the added subscriptions from poultry-fanciers will more than pay for the extra expense of getting out the journal. Success to you, brother Jones, in your new venture.

DOVETAILED HIVES POPULAR.

THE new hive seems to be filling a "long-felt want," as the fellow said. Orders for tens and twenties are coming in at a rapid rate; and it is really surprising what a wonderful demand has sprung up in the short time they have been advertised. Messrs. Schlichter Bros. & Co., of Burnside, Lapeer Co., Mich., have ordered 300 No. 2 Dovetailed hives in one order. We have already used up one carload of lumber for these hives alone, and have ordered another. This hive, it should be remembered, is not a new thing, but an old one that has been in use by practical bee-keepers for a good many years. The times being ripe, it has met with a hearty reception.

SWEET-POTATO PLANTS RAISED ACCORDING TO A "MULTITUDE OF COUNSELORS."

WELL, friends, *our* bed is just splendid. It was built exactly according to directions; and as we did not have spare sash it has had no covering so far, except shutters; but as there have been several cold stormy days, rendering it necessary to keep the shutters on, the plants were getting too white to suit me; therefore we borrowed some sash from one of the greenhouses, and under the influence of more light they began to be more healthy looking. Very likely, however, shutters would have answered every purpose had the plants been started a little later; and, in fact, we now have plants big enough to set out, while it would hardly be safe to put them in the open ground for at least a couple of weeks yet; therefore I think that, in our locality, there is no very particular need of having any glass at all to raise good sweet-potato plants.

WHO IS TO HAVE A PACKAGE OF HENDERSON'S BUSH LIMA BEANS FREE?

WELL, in the first place I said that any subscriber who sent us one new name; then I said that, if it were too much trouble, send us a dollar for another year, after your subscription was out. Pretty soon the subscription clerk informed me that people were asking for lima beans, just because they sent a dollar to pay up or to renew. And then quite a few asked for the lima beans who did not pay up at all; therefore I think we shall have to put it this way: The lima beans are for those who send us the name of a new subscriber. If you can not get a new name handy, pay up all you are owing on GLEANINGS, and send us a dollar for a year ahead. If you have already paid up till next January, then send us a dollar now for GLEANINGS for 1890; or send us 25 cts. for one packet, or \$1.00 for five packets, or \$2.00 for a dozen.

CALIFORNIA HONEY.

OUR friend J. F. McIntyre sends us the following note, accompanied by the three samples of the honey he mentions:

MR. ROOT:—I send you a little block containing three samples of honey. The darkest is fresh flarree honey. If I have not forgotten the flavor of soft maple, it tastes a little like it, and it takes the place of soft maple here. The clearest sample is sage honey evaporated in the big tank, and represents one grade of last season's crop. The other was evaporated by the bees.
J. F. MCINTYRE.

Filmore, Cal., April 15, 1889.
The darkest, or flarree honey, was very fair. The flavor of the clearest sample of sage honey—that

evaporated in the big tank was very fine, with the exception that there was an after pungent taste in the throat not exactly pleasant to us. The flavor of the other sample of sage honey, that evaporated by the bees, was the finest of the three—the pungent taste mentioned in the artificially evaporated sample having been entirely eliminated. To see what others would think of it, we handed the three samples to three of our printers, not telling them which we thought best. We marked them so we could tell which were which. Two of the printers immediately decided just as we had, and another one did on further deliberation. There has been a good deal of discussion as to whether honey evaporated artificially is equal to that evaporated by the bees. If the test above made means anything, it would seem to indicate that bees have got the art down a *little* finer than we have. To make the test a true one, the two samples should be put side by side.

THE COMBINED CRATE, IMPROVED.

We have just changed the combined crate, which we have sold for a good many years, so that it may be manipulated in every respect the same as the T super; i. e., it can be tiered up inside of a Simplicity body; can be used with or without tin separators, and can be emptied of its sections *en masse*. Unlike the T super, it is so constructed that the bee-space may be used either above or below the sections. Although we do not recommend it, the honey-board may be dispensed with, in which case the bee-space should be put *below* the sections. It will also take in open-side sections, which the T super will not satisfactorily. While retaining all the old features of merit, it is now made much more valuable than before. We make this statement so that all those who order the old combined crate may be advised of the change. The price of the combined crate will be the same as formerly.

A "FISH STORY" AND A BAIT FOR NOVICES.

For several days back, correspondents have been forwarding on to us circulars from F. Andrews, 328 West Madison St., Chicago. The circular bears the stamp of a "fish story." It advertises a new hive that will prevent swarming, that will set every idle bee to work, and that will store *twice* as much honey as any other hive made. Mr. A. further claims that it will cost nothing to keep bees, as they feed themselves; that a single colony will net from \$25.00 to \$60.00 per season. It closes up by offering to sell a book, entitled, "Secrets of Bee-keeping," for 15 cents. Bro. Newman, of the *American Bee Journal*, of course, was prompt to find out whether there was any such individual. In his last issue he says they have made four trips to the address of Mr. Andrews, but that he was "out" each time. A woman in an adjoining room said he was there only a few minutes each day, and that he expected to make a trip to California in May. Mr. Newman cracks his editorial whip over Mr. Andrews' shoulders in his following characteristic way. He says:

It is useless for us to caution any one, for our readers do not send "a nickel and a dime" for any "secrets" of bee-keeping. They know better. It is the "novices" he is after. The circulars seem to have been sent to postmasters, and by them distributed into the "boxes," to catch the unwary, and many \$3.00 and "nickels and dimes" for Mr. Andrews to go on a "trip around the world."

P. S.—Since the above was in type, we have the following from friend Newman:

FRIEND ROOT:—After some six special trips to Mr. Andrews' advertised place I have got a copy of his pamphlet, and mail it to you to-day. His hive is a Mitchell, and the extractor a Mc-

Dougall. In fact, the whole pamphlet is mainly a copy of McDougall's, published in Indianapolis twelve years ago. He told the person I sent that he had no hives on hand—had sold none this year, and said it would take 10 days to get one made. He is doing nothing. T. G. NEWMAN.

The book kindly forwarded us, as above, is a pretty fair bee-book for only 15 cents, only it does not fill the bill at all, according to the circular. The principal illustration is one used years ago by N. C. Mitchell. Mr. Andrews, however, has dug out the "N. C. Mitchell," giving the hive a botched appearance. From the back cover we learn that Mr. A. sells patent medicines, etc. The engraving of the extractor is one made for us years ago by Stillman & Co., of Cincinnati, O. The word "Novice" is got rid of by some means.

We have, at this date, 8626 subscribers.

SPECIAL NOTICES.

GOOD SHEARS AT A LOW PRICE.

If any of our readers are in want of a good pair of shears at a low price they will do well to examine our advertisement in another column. We have sold in the past 6 years about 150 dozen, and have just put in stock as many more. The last lot are much nicer than the former stock.

ADVANCE IN PRICE OF SUGAR.

Of course, at the present state of the sugar market we can not sell at the prices in our catalogue. At present writing the price is 2c higher, and liable to go still higher. It will doubtless be another cent higher before it goes any lower. This, of course, does not apply to maple sugar, but we haven't very much stock of this.

EXTRACTED HONEY FOR SALE.

Now that sugars are so high is a good time to close out old honey at good prices. We have just received a lot of 20 kegs of very choice basswood honey, which we offer at \$4.50 per keg of 50 lbs. This is about as nice basswood honey as we ever had, much of it containing some clover, and the price is 1c lower than we have offered for over a year. We have also some basswood honey in 60-lb. square cans, two in a case, that we offer for 9½c per lb.

CUTHBERT RASPBERRY PLANTS AT LOW FIGURES.

Perhaps we have no better honey-plant than the Cuthbert raspberry—at least there is no other plant on which the bees seem to be so busy; and when we consider that Cuthbert raspberries are never without a purchaser—at least they never have been in our locality—it seems to me it is a good deal more rational to put out raspberries than to waste time and money on plants for honey and nothing else. Last year we sold every quart of our Cuthberts, at a price not less than 14 cents; and a great many of them, when they first ripened, brought 10 cents a pint. Now, for immediate orders, before the young plants are torn up by the cultivator, we will fill orders at the following rates: 10 plants, 15c; 100, \$1.00; 1000, \$7.50. If wanted by mail, add 5c for 10, or 25c for 100, for postage. It will be noticed that the above prices are less than half those given in our seed catalogue.

CHANGE IN SCREW-TOP GLASS PAILS.

We call the attention of our customers to the fact that we are compelled to change the pattern of our screw-top glass honey-pails. Those shown on page 22 of our catalogue are no longer made. The manufacturers have discontinued making them, and have destroyed the molds. We have been fortunate enough, however, to find another to take its place. See cut and prices in our advertisement on another page. There are now 4 sizes, and prices are somewhat changed. While on this subject I might also state that there is every prospect for another general strike among glass-blowers, which is bound to run prices up again, the same as a few years ago. At present the prices on this class of goods are as low as we have ever known them, and are sure to go no lower. The probabilities point

toward advanced prices. It will be policy to anticipate your needs and get yourselves supplied. We are laying in a large stock, and hope to hold our prices through the season, but we may be compelled to advance. Prices in our ad. will hold till further notice.

GLEANINGS ENLARGED.

You will notice that we have added 16 *extra* pages to this number. We do this to enable us to utilize some of the valuable articles which have been waiting their turn.

KIND WORDS FROM OUR CUSTOMERS.

CAN'T PART WITH OLD FRIENDS.

Of course, continue GLEANINGS. It has been the friend of my ignorance in the management of bees too long for me to discontinue it now. It is an old and true friend. Send it on.

Home, La.

W. F. ROBERTS, M. D.

The goods ordered of you some time ago came to hand all right, every thing in good shape. Nothing was missing. Thanks for your promptness.

MATTHIAS SCHNEIDER, JR.

McIvor, Mich., Mar. 18, 1889.

Goods came in fine order. I have not had time to examine them thoroughly. Strawberry-plants were very fine. I have not had time to count the separators, as I have just returned from the gold-mines in Lower California.

W. G. BAKER.

San Diego, Cal., April 4, 1889.

SENDING TOMATO-PLANTS BY MAIL.

Those tomato-plants came to-day by mail, and are as nice and fresh as though they had just been taken from the bed. You told in GLEANINGS that you would send 10 for 10 cts., but I have made more out of them the way we count here.

G. A. HOFFMAN.
Riverside, Wash. Co., Ia.

The lawn-mower and barometer came promptly on the 13th inst. Freight \$1.48. The mower is an excellent "institution." It does the nicest and best work, with the least labor, of any thing I ever handled.

S. L. GREER.

Disco, Tenn., April 13, 1889.

I am very much pleased with GLEANINGS, and think it a very valuable paper. I am very much interested in Mr. Root's travels to California, and think the whole of the bee literature is developing and becoming more interesting.

HORACE F. GRESSMAN.

Water Valley, Erie Co., N. Y.

OUR NEW SEWING-MACHINE.

The sewing-machine came all right; freight, 60 cts. It sews as nicely as any Singer sewing-machine in this place, and is as good as their \$40 machines, and is as nicely finished.

D. C. MCLEOD.

Pana, Ill., Feb. 4, 1889.

PLEASED CUSTOMERS.

I received my goods to-day, shipped the 8th. They are all in fine shape. I can not say too much in their praise. It is no wonder you have a big trade, if your goods are always packed with the same care that I always find mine. I never looked over so many pails before, without finding some cuts. These are all perfect. My wife says that the honey-knife and extractor are very nice.

E. A. PRATT.

Myrtle, Pa., April 22, 1889.

STOP MY ADVERTISEMENT.

Friend Root:—Will you please stop my advertisement in GLEANINGS? All my stock is engaged. I have used only GLEANINGS and *Popular Gardening* in advertising this spring, and am better satisfied with the results from both than with any papers I have heretofore used.

THEO. F. LONGENECKER.
Dayton, Ohio, April 18, 1889.

[Your advertisement was exceedingly well gotten up, and was very attractive. I noticed it at the time, and I think that those who write advertisements will do well to study yours a little.]

THE LAST NUMBER JUST SPLENDID.

The last number (April 1) of GLEANINGS is just splendid. I was sick when it came, and thought I would only glance through it; but I could not lay it down till I had read most that was in it.

MAHALA B. CHADDOCK.

Vermont, Ill., April 14, 1889.

Dear Sir:—The \$1.15 worth of seeds came by mail promptly, and through the customs without any duty; and by figuring the same up at catalogue rates from the Canadian house where I had hitherto dealt it amounted to \$1.90 so in that transaction I nearly saved the price of GLEANINGS.

Mining, Ont., March 22, 1889. THOS. STOKES.

BROTHERLY LOVE.

I enjoy your talks in Our Homes very much. Your description of the spirit of brotherly love which you say is characteristic of Long Beach is but a good illustration of the text, "By this ye know that ye have passed from death unto life, because ye love the brethren."

L. A. DUGGAN.

Cuthbert, Ga., Feb. 11, 1889.

[Friend D., what impressed me at Long Beach was, that in a family where the husband was a Baptist and the wife a Methodist, they both joined in insisting that I must see one of the "very best women in the world," who lived in their town; and this "best woman in the world" was a Congregationalist; and it really seemed as if that spirit pervaded Long Beach. The members of all the different churches seemed to exhibit just that spirit toward one another. The consequence was, that when a union meeting was held it contained pretty much all of the people in the town—men, women, and children. In fact, it was a wonder how so small a place could possibly furnish such a tabernacle full of people.]

GET ACQUAINTED.

We don't believe there's a reader of GLEANINGS that wouldn't subscribe for the *BEE-KEEPER'S REVIEW*, to the mutual advantage of readers and REVIEW, if only all these readers were acquainted with the REVIEW and its merits. We are willing to do all in our power to bring about an acquaintance. We shall be glad to send free, to all applicants, three numbers of the REVIEW; and we will send those that are seasonable, too. The perusal of these will give a fair idea of what the REVIEW is like. Also allow us to suggest that it is not necessary to wait until the beginning of the year to subscribe, as we have a big stack of back numbers, and can supply them even from the first issue. The discussions of last year are fully as valuable as those of the present year. Price of the REVIEW, 50 cts. a year.

The Production of Comb Honey is a neat little book of 45 pages; price 25 cts. This book and the REVIEW one year for 65 cts. For \$1.00 the REVIEW will be sent two years, and the book "thrown in." Stamps taken, either U. S. or Canadian.

W. Z. HUTCHINSON,
613 Wood St. 9d Flint, Mich.

In responding to this advertisement mention GLEANINGS.

CARNIOLAN QUEENS.

Now booking orders for June. Tested, \$4.00; untested, \$1.00, or \$5.00 per 1/2 doz.

SEND POSTAL FOR CIRCULAR.

9-10d S. W. MORRISON, M. D., Orford, Pa.

SEND 2-ct. stamp for valuable Poultry Hand-Book. C. D. SENSEMAN, 126 S. 2d St., Philadelphia, Pa.

TESTED Italian queens, limited number, \$1.25 each. Frank Benton's imp. queens, \$4.00 each. 9d S. F. REED, N. Dorchester, N. H.

R. C. Brown Leghorns, EGGS, \$1.00 per 13; \$2.00 per 30. PRAIRIE FARM. GEO. L. FERRIS, FIVE CORNERS, N. Y.

I WILL SELL FULL COLONIES OF BEES, IN eight-frame Langstroth hives, at \$4.00 per colony, in lots of five or more. 9-10d H. C. GILSON, Burr Oak, Mich.

FOUNDATION.

I MANUFACTURE COMB FOUNDATION. I have the latest improved machinery, and large experience. I think I can please you with quality of work. Circular free. J. I. PARENT, Birshton, Saratoga Co., N. Y. 9-10d

Green Wire Cloth,

FOR

Window Screens and Shipping Bees,

AT

GREATLY REDUCED PRICES.

The following lot of wire cloth is a job lot of remnants, and full rolls direct from the factory, that are **FIRST QUALITY**, and the pieces are of such variety of size as to furnish any thing you want. Price 1½ cts. per sq. foot, for full pieces. If we have to cut the size you want, 2 cts. per sq. ft.

When you order a piece, and somebody else has got it ahead of you, we will substitute a piece the nearest in size to the one ordered, unless you specify in your order that you do not want us to substitute. The figures on the left indicate the width.

- 8 | 10 rolls, 67 sq. ft. each: 1 each of 66, 65, 64, 63, 62, 61, 60, 59, 58, 57, 56, 55, 54, 53, 52, 51, 50, 49, 48, 47, 46, 45, 44, 43, 42, 41, 40, 39, 38, 37, 36, 35, 34, 33, 32, 31, 30, 29, 28, 27, 26, 25, 24, 23, 22, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1.
- 12 | 29 rolls of 100 sq. ft. each; 4 of 98, and 1 each of 102, 97, 92, 75, and 44 sq. ft.
- 16 | 4 rolls of 133 sq. ft.; and 1 each of 132, and 130 sq. ft.
- 18 | 12 rolls, 150 sq. ft.
- 24 | 13 rolls of 200 sq. ft. each.
- 26 | 79 rolls of 216 sq. ft. each, and 1 each of 215, 210, and 204 sq. ft.
- 28 | 43 rolls of 233; 3 of 224; 1 of 237 sq. ft.
- 30 | 10 rolls, 250 sq. ft.
- 34 | 6 rolls of 283 sq. ft.
- 38 | 9 rolls, 316 sq. ft.
- 40 | 4 rolls, 333 sq. ft.; 2 of 44 in., 366 sq. ft.
- 42 | 7 rolls, 350 sq. ft. each.

THE FOLLOWING CLOTH IS BLACK.

A. I. ROOT, Medina, O.

THE BEST WAY TO GET COMB HONEY

is to get some of C. E. Jones's Southern bees. I handle more Southern bees than any other man in the North. Sometimes I get three lots in one week. I have ordered as many as fifty colonies at one time. I have men in the South that raise bees for me only, and the bees are pure Italians, and healthy. I have tried three years, and found one colony of young bees in May, from the South, are worth two that winter here. One L. frame nucleus, \$2.50; 2 frame, \$3.00. New swarms, five frames, 3 lbs. bees, in shipping-case, just from the South, \$6.00.

9d C. E. JONES, Delaware, Ohio.
In responding to this advertisement mention GLEANINGS.

FOR SALE.

Sections in bushel boxes, No. 1, \$3.00 per M. Japanese buckwheat; a complete S. or L. hive for comb honey, 75c; shipping-crates, and all kinds of supplies cheap. Price list free.

W. D. SOPER, Jackson, Mich.

JOB LOT OF POULTRY-NETTING.

Small Pieces at same Rate as full Rolls — ¾ ct. per Square Foot.

Five or more pieces, 5 per cent off; ten or more, 10 per cent discount.

Inches wide.	Inch mesh.	No. of Wire.	
60	2	19	495, 445, 335, 330, 325, 280, 220, 165.
72	2	18	195.
72	2	19	720, 672, 636, 618, 558, 438, 270, 252, 222, 168, 162, 156, 156, 48.

We know of nothing nicer or better for a trellis for creeping vines than the above netting. A. I. ROOT, MEDINA, O.

NICKEL-PLATED "LEADER" SHEARS.



TABLE OF PRICES.

Postage.		Name.	Prices		
			One.	10	100
5	6½-inch nickel	Leader Shears	\$ 20	\$1 90	\$18 50
5	7	"	25	2 30	22 50
5	7½	"	30	2 70	26 00
5	8	"	35	3 00	29 00
6	8½	"	40	3 40	33 00
8	9	"	45	3 80	37 00
10	10	"	50	4 20	41 00

The above are all what are known as straight trimmers, as shown in the cut, except the 9 and 10 inch. Part of these are straight, but most of them are bent trimmers; that is, the bottom of the shear, or bottom blade, is on a level with the bottom of handle. Such large shears are generally used for cutting on a table, and this shape is preferable. We have also a few dozen 9-inch barber shears that will be put in at the same price. These shears are made near here, and we have been in the factory, and have seen them in process of making. The blades are steel laid, and all is handsomely nickel plated. Now you will want to know how we can sell them so cheap. In welding the steel plate on to the blades there will sometimes be a little flaw that can not be all taken out in polishing. These slight blemishes do not injure the shears a particle for actual service, but still they don't like to put them among the first grade of perfect goods. They are kept by themselves, and sold at a lower price. Of course, these goods are not regular stock, and are not advertised by the makers. Therefore whoever takes the lot as they come can get them very low. Having bought so large a quantity, 150 dozen, we got them at our own price, and it is for that reason that we are able to offer the above bargains. Some of the shears are perfect in every respect, except that they lack a full nickel plate all over, and some are so near perfect that you can not see any thing at all the matter with them, and they are all just as good for service as the very best grade.

A. I. ROOT, Medina, O.

EARLY + QUEENS

	Apr.	May.
1 untested queen	\$1.00	\$1.00
3 " "	3.00	2.50
1 virgin	\$6 per doz	60
1 tested	3.00	2.50
3 " "	7.50	6.00

2 and 3 fr. nuclei; special rates to dealers.
South Carolina is the best State in the South for early queens. The climate is well adapted to queen-rearing, and it takes but 4 or 5 days to send them through the mails to any part of the Northern States or Canada. Prompt shipment and safe arrival guaranteed.
W. J. ELLISON,
6-8-9-10d Stateburg, Sumter Co., S. C.

ALL + ITALIANS

In responding to this advertisement mention GLEANINGS.

1000 Lbs. Bees with Queens and Brood.
Bee Supplies, Honey, &c. Price List Free.
Oliver Foster, Mt. Vernon, Linn Co., Iowa.
Mention Gleanings. 7-10db

Pure Italian Bees For Sale
Two-frame nuclei, \$3.50; 3-frame, \$4.00. Full colony in A. I. Root's Simplicity hive, \$7.00. Each nucleus and full colony to contain a fine tested queen, and plenty of bees and brood, all on wired L. frames, combs drawn from foundation. To be shipped in May. Safe arrival guaranteed. Hives new, and every thing first-class. I shall do by all as I would be done by.
N. A. KNAPP,
7-10db ROCHESTER, LORAIN CO., OHIO.
In responding to this advertisement mention GLEANINGS.

Minorcan Queens.

Very prolific, and tolerably docile. No foul brood known. Will be sent from April to October, by mail, on receipt of \$2 greenback in certified letter.
F. C. ANDREU.
7-8-9d Port Mahon, Minorca, Spain.

LOOK HERE!

A complete hive for comb honey, \$1.30. No. 1 V-groove one-piece sections, \$3.50 per M. Price list free.
J. M. KINZIE,
3tfd Rochester, Oakland Co., Mich.

**MUTH'S
HONEY-EXTRACTOR,
SQUARE GLASS HONEY-JARS,
TIN BUCKETS, BEE-HIVES,
HONEY-SECTIONS, &c., &c.
PERFECTION COLD-BLAST SMOKERS.**

Apply to CHAS. F. MUTH & SON,
CINCINNATI, O.
P. S.—Send 10-cent stamp for "Practical Hints to Bee-Keepers."
(Mention Gleanings.) 1tfd

THE HIVE AND HONEY-BEE, and DADANT'S FOUNDATION.
See advertisement in another column.

ON 30 DAYS' TRIAL.

EGGLESTON'S ELASTIC TRUSS
Has a Pad different from all others, is cup shape, with Self-adjusting Ball in center, adapts itself to all positions of the body, while the ball in the cup presses back the intestines just as a person does with the finger. With light pressure the Hernia is held securely day and night, and a radical cure certain. It is easy, durable and cheap. Sent by mail Circulars free.
EGGLESTON TRUSS CO., Chicago, Ill.

In responding to this advertisement mention GLEANINGS.

Italian Bees and Queens for Sale

Wishing to reduce my stock of bees, I offer 50 colonies of fine Italian bees at the following extremely low rates: Full strong colonies on L. frames, put up in light shipping-boxes, f. o. b. at my station, \$5.00 per colony. Tested queens, \$1.25 each. Satisfaction guaranteed.

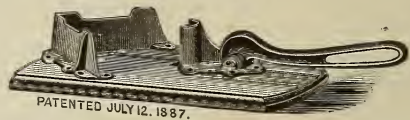
A. C. BRUSH,
8-11db Susquehanna, Sus. Co., Pa.
In responding to this advertisement mention GLEANINGS.

Attention, Poultrymen!

Black Minorca, Langshan, R. C. B. Leghorn, Silver-spangled Hamburg, and Wyandotte eggs, \$1.00 per 13. Minorca fowls, \$3.00 per pair.

E. P. ALDRIDGE,
8tfd Franklin Square, Col. Co., O.
In responding to this advertisement mention GLEANINGS.

SECTION PRESS. PRICE \$2.00.



For putting together one-piece sections. Every section square, and a smart boy or girl can fold 100 in six minutes. Try one and you will never regret it. Send to your supply dealer or to
5-16db
WAKEMAN & CROCKER, Lockport, N. Y.

In responding to this advertisement mention GLEANINGS.

B. J. MILLER & CO., NAPPANEE, IND., BEE - HIVES AND ITALIAN QUEENS.

4¼x4¼ Sections, from 500 to 3000, at \$3.50 per 1000; if you want more than that, write for prices. Brood-frames, T-tin Cases, Foundation, and Metal Corners. Send for price list. 1tfd
In responding to this advertisement mention GLEANINGS.

SAVE FREIGHT.

BUY YOUR SUPPLIES NEAR HOME AND SAVE FREIGHT.

We carry a complete line of Hives, Sections, Smokers, Honey Extractors, etc. Our motto, good goods and low prices. Sections in large quantities, only \$3.25 per M. Illustrated catalogue for your name on a postal card.

R. B. LEAHY & CO.,
3-14db Box 11, Higginsville, Mo.
In responding to this advertisement mention GLEANINGS.

WHAT TO DO,

—AND—

How to Be Happy While Doing It.

The above book, by A. I. Root, is a compilation of papers published in GLEANINGS in 1886, '7, and 8. It is intended to solve the problem of finding occupation for those scattered over our land, out of employment. The suggestions are principally about finding employment around your own homes. The book is mainly upon market-gardening, fruit culture, poultry-raising, etc. I think the book will be well worth the price, not only to those out of employment, but to any one who loves home and rural industries. Price in paper covers, 50 cts.; cloth, 75 cts. If wanted by mail, add 8 and 10c respectively.

A. I. ROOT, Medina, Ohio.

J. C. SAYLES, HARTFORD, WIS.,

Manufactures Apiarian Supplies of Every Description. Catalogue Free to All.
3tfdb *Send Your Address.*

BEE-HIVES, SECTIONS, ETC.

WE make the best bee hives, shipping-crates, sections, etc., in the world, and sell them cheapest. We are offering our choicest white one-piece $4\frac{1}{4} \times 4\frac{1}{4}$ sections, in lots of 500, at \$3.50 per 1000.

Parties wanting more, write for special prices. No. 2 sections, \$2.00 per 1000. Catalogues free, but sent only when ordered. 1tfdb

C. B. LEWIS & CO., Watertown, Wis.

In responding to this advertisement mention GLEANINGS.

FOR THE SEASON OF 1889.

Headquarters in the South.

ELEVENTH ANNUAL CATALOGUE NOW READY.

A steam-factory exclusively for the manufacture of Bee-Keepers' Supplies.

ITALIAN QUEENS.

Tested, ready in March. Untested, by April 1st. Contracts taken with dealers for the delivery of a certain number of queens per week, at special figures.

FOUR-FRAME NUCLEUS,

with pure Italian queen, containing 3 pounds of bees when secured—in April and May, \$4.00; after, 25 cts. less. Safe arrival and satisfaction guaranteed on all queens and nuclei.

For more particulars, send for Eleventh Annual Catalogue.

1-3-5d

P. L. VIALLO, N,

Bayou Goula, Iberville Parish, La.

HONEY, BEES, QUEENS, SUPPLIES.

Catalogue Free.
OLIVER FOSTER, MT. VERNON, IOWA. 3tfdb

DADANT'S FOUNDATION

Is kept for sale by Messrs. T. G. Newman & Son, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; F. L. Dougherty, Indianapolis, Ind.; B. J. Miller & Co., Nappanee, Ind.; E. S. Armstrong, Jerseyville, Ill.; E. Kretschmer, Coburg, Iowa; P. L. Viallon, Bayou Goula, La.; M. J. Dickason, Hiawatha, Kansas; J. W. Porter, Charlottesville, Albemarle Co., Va.; E. R. Newcomb, Pleasant Valley, Dutchess Co., N. Y.; D. A. Fuller, Cherry Valley, Ill.; J. B. Mason & Sons, Mechanic Falls, Maine; G. L. Tinker, New Philadelphia, O.; Jos. Nysewander, Des Moines, Ia.; C. H. Green, Waukesha, Wis.; G. B. Lewis & Co., Watertown, Wisconsin; J. Mattoon, Atwater, Ohio; Oliver Foster, Mt. Vernon, Iowa; C. Hertel, Freeburg, Illinois; Geo. E. Hilton, Fremont, Mich.; J. M. Clark & Co., 1409 15th St., Denver, Colo.; Goodell & Woodworth Mfg. Co., Rock Falls, Ill.; J. A. Roberts, Edgar, Neb.; E. L. Gould & Co., Brantford, Ontario, Canada; J. N. Heater, Columbus, Neb.; O. G. Collier, Fairbury, Neb.; C. D. Batter, Peterboro, N. H.; Madison Co., N. Y.; G. K. Hubbard, Fort Wayne, Ind., and numerous other dealers.

We guarantee every inch of our foundation equal to sample in every respect. Every one who buys it is pleased with it.

Write for free samples, and price list of bee-supplies and specimen pages of the new

REVISED LANGSTROTH BOOK,

Edition of 1889.

3tfdb

**CHAS. DADANT & SON,
Hamilton, Hancock Co., Illinois.**

In responding to this advertisement mention GLEANINGS.

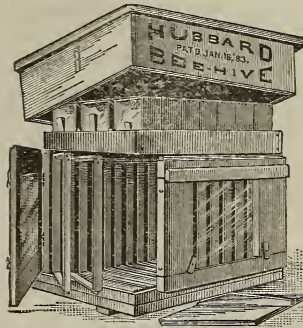
DOOLITTLE

says that if you wish any of those nice Italian bees, at \$7.00 a colony, you must speak quick, for they are going fast. The reason that they go so fast is because each colony contains a nice \$4.00 queen. See page 245 of GLEANINGS for April 1st.

G. M. DOOLITTLE, Borodino, Onon. Co., N. Y.

In responding to this advertisement mention GLEANINGS.

FORT WAYNE, IND.



CIRCULARS FREE.
ASK FOR SAMPLE ONE-PIECE SECTION IF YOU WANT IT.
G. K. HUBBARD,
277 S. HARRISON ST.,
FT. WAYNE, IND.

If you are ever annoyed by the scraping and breaking of combs; killing bees when setting a frame to one side, or hanging it in the hive; sagging at the bottom and getting waxed fast; shaking about when moving a hive; in short, if you dislike to pry and wrench your frames, break combs, and kill bees while handling them, you will be pleased with this hive.

VERY CONVENIENT. AGENTS WANTED.
For "1st Principles in Bee Culture." It tells how to Divide, Transfer, Introduce Queens, Feed, Unite, Stop Robbing, &c. Money returned upon return of book, if you are not satisfied.
Mention GLEANINGS. 7-12db

LOOK HERE!

I will sell fine colonies of pure Italian bees, with their queens, in 10-frame Simplicity hives, 10 frames all worker comb and hive new, well painted, and guaranteed to arrive at your express office in good shape. Prices: 1 hive, \$7.00; 2 at one time, \$13.00; 4, same, \$24.00. Remember the risk of shipping lies with me. Address **JNO. A. THORNTON,** Exp. office, Ursa, Ill. Lima, Adams Co., Ill. 6-11db
Mention Gleanings.

50 Colonies of Bees for Sale.

In order to reduce my stocks. Same are Italians, in L. hives, with combs built on foundation mostly wired. Price \$5.00 per colony. Will ship as early as weather will permit, and guarantee safe arrival.

ADOLPH VANDEREIKE,

7d Lake Mills, Jefferson Co., Wis.

THE ABC OF CARP CULTURE

A COMPLETE TREATISE

Upon the Food Carp and its Culture.

INCLUDING PLANS AND SPECIFICATIONS, AND FULLEST INSTRUCTIONS FOR THE CONSTRUCTION OF PONDS, AND EVERY THING PERTAINING TO THE BUSINESS OF RAISING CARP FOR FOOD.

Illustrated by Many Fine Engravings.

By A. I. Root and George Finley.

PRICE: 35 Cts.; by Mail, 40 Cts.

A. I. ROOT, Medina, O.

Wants or Exchange Department.

Notices will be inserted under this head at one-half our usual rates. All ads intended for this department must not exceed 5 lines, and you must say you want your ad in this department, or we will not be responsible for any error. You can have the notice as many lines as you please; but all over five lines will cost you according to our regular rates. This department is intended only for bona-fide exchanges. Exchanges for cash or for price lists, or notices offering articles for sale can not be inserted under this head. For such our regular rates of 20 cts. a line will be charged, and they will be put with the regular advertisements.

WANTED.—To exchange 250 colonies of bees, for horses, mules, wagons, buggies, and 4 h. p. engine, or any thing useful on a plantation.
21tdb ANTHONY OPP, Helena, Phillips Co., Ark.

WANTED.—To exchange pure Brown Leghorn eggs and cockerels (Todd strain) for any thing useful. Write first.
3tdb A. F. BRIGHT, Mazeppa, Wabasha Co., Minn.

WANTED.—You to send for my new price list of Imported and American Italian queens. Can ship as early as the earliest.
3tdb R. H. CAMPBELL, Madison, Morgan Co., Ga.

WANTED.—To sell or exchange, Italian bees and queens, and supplies. Address
4tdb OTTO KLEINOW, No. 150 Military Ave., Detroit, Mich.

WANTED.—To exchange all kinds of bee-keepers' supplies and Cuthbert raspberry-plants for bees.
8tdb C. W. COSTELLO, Waterboro, York Co., Me.

WANTED.—To exchange, barrel steamer for cooking feed, T pipe complete, and Wilson hand bone-mill, *new*, for extracted honey or any thing of standard market value.
8-9d H. L. GRAHAM, Letts, Iowa.

WANTED.—A good workhand by the year, who knows something about bees, competent to manage a large farm and stock.
8-9d G. J. GRAY, Dell, Malheur Co., Ore.

WANTED.—To exchange three-frame nuclei, at \$3.00 each. Tested queens, \$1.25 each; untested, 75 cts. each; Italian albino, for Shropshire or Hampshire sheep.
8tdb I. R. GOOD, Nappanee, Ind.

WANTED.—To exchange power buzz-saw (iron frame, wood table, with two 12-in. saws) for a 16 in. or 18 in. planer. Write, describing what you have got.
E. M. TENNANT, Willcett, Cort. Co., N. Y.

WANTED.—By a graduate of one of the best commercial colleges of America, to teach a few young men or ladies a thorough course in book-keeping, by mail, in exchange for thoroughbred sheep, swine, or buckwheat. Best references.
FINIS A. WOOTTON, Skilesville, Ky.

WANTED.—To exchange a magic lantern, 12 views, cost \$12, for a watch.
9-10d E. B. HUGHES, Pipestem, Summers Co., W. Va.

WANTED.—To exchange a Barnes foot-power saw combined. Also a first-class violin, cheap at \$15.00, for Italian bees on L. frames.
J. E. HENDERSON, Roney's Point, W. Va.

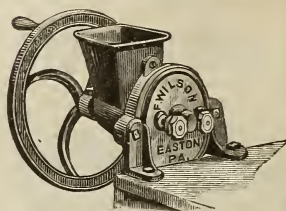
WANTED.—To exchange a 3 horse power engine and boiler for a good horse; also 1000 sections for two bushels of Japanese buckwheat.
W. S. WRIGHT, Battle Creek, Mich.

WANTED.—To exchange Japanese buckwheat and P. Rock eggs, and Barnes improved circular saw, for bees by the pound, young queens, and reliable strawberry-plants.
9-12db H. O. McELHANY, Cedar Rapids, Ia.

WANTED.—To exchange bees by the pound, for buckwheat (Japanese preferred), Poland China brood sow, or thoroughbred pigs.
9d F. A. WOOTTON, Skilesville, Ky.

Wilson's No. 1 Bone-Mill,

FOR GRINDING DRY BONES, SHELLS, GRAIN, AND ANY THING ELSE YOU WANT TO GRIND.



Who has not wanted a mill of some kind, to grind up things? The coffee-mill is all right as far as it goes; but it is slow; and if you don't look out it will break. The mill shown in the accompanying picture will not only grind all sorts of grain for the chickens, but it will also break it up coarsely for table use. Cracked wheat and cracked corn are not to be despised for a change in the bill of fare, I tell you, especially when you have nice honey or maple molasses to fix with it. Well, this mill will do more too. It will grind oyster-shells so as to give the hens material for egg-shells. It will also grind bones; yes, broken crockery, broken flower-pots, or any thing else. Well, by the latter operation you kill two birds with one stone—you get it out of the door-yard, and furnish the biddies just exactly what they need for grinding up the grain in their crops. If you do not believe it is better than gravel, just give the fowls a chance to tell you which they like best. The usual price of this mill is \$5.00; but you may have the mill and GLEANINGS too a whole year, for \$5.50. If you have already paid for GLEANINGS for a year, you may have the mill for \$4.50. The sieve attachment for taking out the fine dust, when crushing shells, or to take out fine meal, when cracking corn, will be furnished for 60 cents extra.

A. I. ROOT, Medina, O.

IGNOTUM TOMATO-PLANTS.

A great lot of them, transplanted and well rooted, ready to go off by first mail. Prices, 3 for 10 cents; 10 for 25 cents, prepaid by mail. By express, \$2.00 per 100.
A. I. ROOT, Medina, O.

EGGS FOR HATCHING, from pure-bred Langshans, L. Brahmas, and Wyandottes; \$1.25 per 13; 26 for \$2.00; satisfaction guaranteed.
9d J. W. & L. J. RAY, Xenia, Ohio.

FOR SALE CHEAP.

200 HALF-STORY WIDE FRAMES, AND 300 wide frames with tin, all as good as new. Simplicity sizes, will be sold to the highest bidder.
9-10d W. L. COGGSHALL, West Groton, N. Y.

Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough to these queens to pay for buying them up and keeping them in stock; and yet it is oftentimes quite an accommodation to those who can not afford higher-priced ones.

I have 12 black queens for sale, at 25 cts each.
W. P. W. DUKE, Nettleborough, Clarke Co., Ala.

I will mail Italian hybrid queens for the next 60 days; three for \$1.00, or one for 35 cts.
W. P. DAVIS, Hyatt, Anson Co., N. C.

FOR SALE.—20 hybrid queens at 50 cts. each, shipped in Peet cage; safe arrival guaranteed.
H. L. FISHER, Milford, Kosciusko Co., Ind.

I have a few mismated Italian queens which I will sell for 30 cts. each; four for one dollar. Warranted good layers.
J. T. VAN PETTEN, Linn, Wash. Co., Kan.

I have about 20 hybrid queens, and will take 35 cents each, or 3 for \$1.00.
E. S. VICKERY, Hartwell, Hart Co., Ga.

HEADQUARTERS IN THE WEST

FOR THE MANUFACTURE AND SALE OF

Bee-Keepers' Supplies.

CHAFF AND SIMPLICITY HIVES FURNISHED AT A GREAT REDUCTION IN PRICE.

A full line of supplies always on hand. Also Italian queens and bees at a very low price. Send for large illustrated price list. 1-23d

A. F. Stauffer, Sterling, Ill.

In responding to this advertisement mention GLEANINGS.

IMPORTED QUEENS.

In May and June, each - - - - \$2 00
In July and August, each - - - - 1 80
In September and October, each - - - - 1 40

Money must be sent in advance. No guarantee on shipments by mail. Queens sent by express (8 at least), which die in transit, will be replaced if returned in a letter. 1-11d

CHAS. BIANCONCINI, Bologna, Italy.

BEEES and QUEENS!

Ready to Ship.

Friends, if you are in need of queens or bees to replace in hives where they have been lost during the winter, I can accommodate you at the following low prices: Italian bees, $\frac{1}{2}$ lb., 65 cts.; 1 lb., \$1.00. Untested queens, \$1.00; tested, \$1.50. Hybrid bees, $\frac{1}{2}$ lb., 50 cts.; 1 lb., 90 cts. Hybrid queens, 75 cts. Prices by the quantity will be sent on application. 6-7 9-11d

W. S. CAUTHEN,

Heath Spring, Lancaster Co., S. C.

In responding to this advertisement mention GLEANINGS.

1889. Italian Queens. 1889.

Having moved 8 miles from Nicholasville to a better location for bees, I will continue to raise queens, and more extensively than formerly. I will have the very best of Italians only. Select tested queens, in April, \$3.00; May, \$2.50; June, \$2.00; July 1 to Nov. 1, \$1.50. Queens warranted purely mated, \$1.00; 6 for \$5.00. Make money orders payable at Nicholasville. Send for circular.

Address **J. T. WILSON,**

4-5tfd Little Hickman, Jess. Co., Ky.

In responding to this advertisement mention GLEANINGS.

FOUNDATION and HIVES for sale at Root's prices. E. R. MILLER, 7-9d Garden City, Cass Co., Mo.

THREE-FRAME NUCLEI, with tested queen, pure Italian, \$3.50. Ready May 15th. 7-9d D. B. LOVETT, Crestline, Crawford Co., O.

1872. One Dollar 1889.

Tested Italian Queens. Progeny large, well marked, and fine honey-gatherers. Orders filled as early in May as weather permits. Select tested, untested, nuclei, bees, etc., at low prices. Send for price list. 7-9-11d

C. M. HICKS, Fairview, Wash. Co., Md.

Cash for Beeswax!

Will pay 20c per lb. cash, or 23c in trade for any quantity of good, fair, average beeswax, delivered at our R. R. station. The same will be sold to those who wish to purchase, at 27c per lb., or 30c for best selected wax.

Unless you put your name on the box, and notify us by mail of amount sent, I can not hold myself responsible for mistakes. It will not pay as a general thing to send wax by express.

A. I. ROOT, Medina, Ohio.

J. FORNCROOK & CO.,

MANUFACTURERS OF THE

"BOSS" ONE-PIECE SECTIONS,



Will furnish you, the coming season, ONE-PIECE SECTIONS as cheap as the cheapest. WRITE FOR PRICES.

Watertown, Wis., Jan. 1, 1889.

1-11d

In responding to this advertisement mention GLEANINGS.

Send for Sample of MY *IMPROVED* Lawn Bee-Hive,

With neat portico, cover, and bottom-board, nailed, and painted inside and out, lettered and numbered; 8 metal-cornered brood-frames with fdn. starters, 1 enamel sheet, 1 Heddon honey-board, painted edge; 1 T super, painted, filled with sections, fdn. starters, and separators, boxed and delivered at depot for \$4; on order for 10 hives the price of sample will be deducted. Money returned if not satisfactory. Write for prices in quantities. Early queens, nuclei, pounds of bees, full colonies, and supplies for sale. J. C. FRISBEE,

Prop. Evergreen Lawn Apiary. Suffolk, Nanse. Co., Va.

Mention GLEANINGS.

7-19d

CARNIOLAN QUEENS

A SPECIALTY.

Largest and Purest Carniolan Apiary in America. Send for descriptive circular and price list. Address

ANDREWS & LOCKHART,

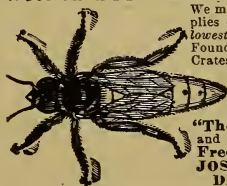
3tfd

Pattens Mills, Washington Co., N. Y.

Western BEE-KEEPERS' Supply Factory.

We manufacture Bee-Keepers' supplies of all kinds, best quality at lowest prices. Hives, Sections, Foundation, Extractors, Smokers, Crates, Veils, Feeders, Clover Seeds, Buckwheat, etc. Imported Italian Queens.

Queens and Bees. Sample Copy of our Bee Journal, "The Western Bee-Keeper," and latest Catalogue mailed Free to Bee-Keepers. Address JOSEPH NYSEWANDER, DES MOINES, IOWA



1-11d

Barnes' Foot-Power Machinery.



Read what J. I. PARENT, of CHARLTON, N. Y., says—"We cut with one of our Combined Machines last winter 50 chaff hives with 7-inch cap, 100 honey-racks, 500 broad frames, 2,000 money-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it all with this Saw. It will do all you say it will."

Catalogue and Price List Free. Address W. F. & JOHN BARNES, 545 Ruby St., Rockford, Ill.

When more convenient, orders for Barnes' Foot-Power Machinery may be sent to me. A. I. ROOT. 23tfd

VANDERVORT COMB FOUNDATION MILLS.

Send for samples and reduced price list.

1tfd

JNO. VANDERVORT, Laceyville, Pa.

SOUTHERN HEADQUARTERS

FOR EARLY QUEENS,

Nuclei, and full colonies. The manufacture of hives, sections, frames, feeders, foundation, etc., a specialty. Superior work and best material at "let-live" prices. Steam factory, fully equipped, with the latest and most approved machinery. Send for my illustrated catalogue. Address

1tfd

J. P. H. BROWN, Augusta, Ga.

GLEANINGS IN BEE CULTURE.

❧ BEE-KEEPERS' * SUPPLIES. ❧

QUALITY AND WORKMANSHIP UNSURPASSED.

We are prepared to furnish **Bee-Keepers** with **Supplies Promptly**, and with goods of uniform excellence, as heretofore. Our Hives all take the **Simplicity Frame**. The "**Falcon**" **Chaff Hive** and the "**Chautauqua**," with **Dead-Air Spaces**, are both giving universal satisfaction.

We manufacture a **Full Line of Bee-Keepers' Supplies**, including "**Falcon**" **Brand Foundation**, and gladly

FURNISH ESTIMATES, AND SOLICIT CORRESPONDENCE.

SEND * FOR * LARGE * ILLUSTRATED * PRICE * LIST * FOR * 1889 * FREE.

THE W. T. FALCONER MANUFACTURING CO.,

Jamestown, N. Y.

1-24db

Successors to W. T. FALCONER.

❧ In responding to this advertisement mention GLEANINGS.

FOUNDATION.

The foundation we sell is fresh made, and is not over two weeks from the mill. Fresh-made foundation is much the best, other manufacturers to the contrary notwithstanding. All orders filled promptly (in the season). Address for prices, etc.,

1tfdb

F. A. SALISBURY, Syracuse, N. Y.

❧ In responding to this advertisement mention GLEANINGS.

NEW YORK.

FOREIGN ORDERS SOLICITED.

NEW JERSEY.

EASTERN * DEPOT

(Bees.) —FOR— (Queens.)

EVERYTHING USED BY BEE-KEEPERS.

EXCLUSIVE MANUFACTURER OF THE

STANLEY AUTOMATIC HONEY-EXTRACTOR.

Dadant's Foundation, Wholesale and Retail.

WHITE POPLAR OR BASSWOOD SECTIONS.

One-Piece, Dovetail, or to nail. Any Quantity, any Size.

COMPLETE MACHINERY—FINEST WORK.

Send for Handsome Illustrated Catalogue, Free.

E. R. NEWCOMB, Pleasant Valley, Dutchess Co., N.Y.

CONN.

MASS.

3trdb

BEE SUPPLIES.

Wholesale and Retail.

Illustrated catalogue FREE to all. Address 3-11tfdb

❧ In responding to this advertisement mention GLEANINGS.

We have the largest steam-power shops in the West, exclusively used to make EVERYTHING needed in the Apiary, of practical construction and at the LOWEST PRICES. Italian bees, queens, 12 styles of Hives; Sections, Honey-Extractors, Bee-Smokers, Feeders, Comb Foundation, and everything used by bee-keepers, always on hand.

E. KRETCHMER, COBURG, MONTGOMERY CO., IOWA.

Great Reduction in Prices.



We now sell our premium No. 1 one-piece sections at \$3 per M; No. 2 at \$2. A Liberal Discount will be made on larger orders. Dealers would do well to get our figures on sections and wood separators before buying elsewhere.

Berry boxes,

baskets, and crates of the most approved styles at the lowest rates. Send for catalogue with Reduced Prices. Address as in cut above. 1-12db

❧ In responding to this advertisement mention GLEANINGS.

HALF-PRICE!

SOMETHING FOR THE GOOD WIFE.

Any one sending us \$3.50 for 1000 FIRST-CLASS SECTIONS or \$4.00 worth of other supplies may have one of our SELF-HEATING CHARCOAL SMOOTHING-IRONS for \$1.50, which is half-price. For description, send for circular, or see adv't in GLEANINGS for Oct. 15, 1888.

SMITH & SMITH,

Kenton, Hardin Co., Ohio.

7tfdb

❧ In responding to this advertisement mention GLEANINGS.

JAPANESE BUCKWHEAT!

By freight or express, not prepaid.

Per bu., \$2.00; per ½-bu., \$1.25; per peck, 75 cts.; 5 lbs., 50 cts; per lb. by mail post-paid, 25 cts.

Address

John C. Gilliland,
Bloomfield, Greene Co., Ind.

5-14db

❧ In responding to this advertisement mention GLEANINGS.